



Service Manual

Service Manual

GM750



Model : GM750



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1. INTRODUCTION

1.1. Purpose

This manual provides the information necessary to repair, calibration, description and download the features of this model.

1.2. Regulatory Information

A. Security

Toll fraud, the unauthorized use of telecommunications system by an unauthorized part (for example, persons other than your company's employees, agents, subcontractors, or person working on your company's behalf) can result in substantial additional charges for your telecommunications services. System users are responsible for the security of own system.

There are may be risks of toll fraud associated with your telecommunications system. System users are responsible for programming and configuring the equipment to prevent unauthorized use. The manufacturer does not warrant that this product is immune from the above case but will prevent unauthorized use of common carrier telecommunication service of facilities accessed through or connected to it. The manufacturer will not be responsible for any charges that result from such unauthorized use.

B. Incidence of Harm

If a telephone company determines that the equipment provided to customer is faulty and possibly causing harm or interruption in service to the telephone network, it should disconnect telephone service until repair can be done. A telephone company may temporarily disconnect service as long as repair is not done.

C. Changes in Service

A local telephone company may make changes in its communications facilities or procedure. If these changes could reasonably be expected to affect the use of the phones or compatibility with the net work, the telephone company is required to give advanced written notice to the user, allowing the user to take appropriate steps to maintain telephone service.

D. Maintenance Limitations

Maintenance limitations on the phones must be performed only by the manufacturer or its authorized agent. The user may not make any changes and/or repairs expect as specifically noted in this manual. Therefore, note that unauthorized alternations or repair may affect the regulatory status of the system and may void any remaining warranty.

E. Notice of Radiated Emissions

This model complies with rules regarding radiation and radio frequency emission as defined by local regulatory agencies. In accordance with these agencies, you may be required to provide information such as the following to the end user.

1. INTRODUCTION

F. Pictures

The pictures in this manual are for illustrative purposes only; your actual hardware may look slightly different.

G. Interference and Attenuation

A phone may interfere with sensitive laboratory equipment, medical equipment, etc. Interference from unsuppressed engines or electric motors may cause problems.

H. Electrostatic Sensitive Devices

ATTENTION

Boards, which contain Electrostatic Sensitive Device (ESD), are indicated by the  sign. Following information is ESD handling:

- Service personnel should ground themselves by using a wrist strap when exchange system boards.
- When repairs are made to a system board, they should spread the floor with anti-static mat which is also grounded.
- Use a suitable, grounded soldering iron.
- Keep sensitive parts in these protective packages until these are used.
- When returning system boards or parts like EEPROM to the factory, use the protective package as described.

2. PERFORMANCE

2.1 Product Name

GM750 : WCDMA900/1900/2100+EGSM/GSM850/DCS/PCS
(HSDPA 7.2Mbps / GPRS Class 12 / EDGE Class 12)

2.2 Supporting Standard

Item	Feature	Comment
Supporting Standard	WCDMA(FDD1,2,8)/EGSM/GSM850/DCS1800/P CS1900 with seamless handover Phase 2+(include AMR)	
Frequency Range	WCDMA(FDD1) TX : 1920 – 1980 MHz WCDMA(FDD1) RX : 2110 – 2170 MHz WCDMA(FDD2) TX : 1850 – 1910 MHz WCDMA(FDD2) RX : 1930 – 1990 MHz WCDMA(FDD8) TX : 880 – 915 MHz WCDMA(FDD8) RX : 925 – 960 MHz EGSM TX : 880 – 915 MHz EGSM RX : 925 – 960 MHz GSM850 TX : 824 – 849 MHz GSM850 RX : 869 – 894 MHz DCS1800 TX : 1710 – 1785 MHz DCS1800 RX : 1805 – 1880 MHz PCS1900 TX : 1850 – 1910 MHz PCS1900 RX : 1930 – 1990 MHz	
Application Standard	WAP 2.0, JAVA 2.1	

2.3 Main Parts : GSM Solution

Item	Part Name	Comment
Digital Baseband	MSM7200A : Qualcomm	
Analog Baseband	PM7540 : Qualcomm	
RF Chip	RTR6285 : Qualcomm	

2. PERFORMANCE

2.4 HW Features

Item		Feature	Comment
Form Factor		Bar type	
Battery	1) Capacity Standard : Li-Poly, 1500mAh		
	2) Packing Type : Soft Pack		
Size		Standard : 109.8 x 53.5 x 12.9mm	
Weight		119g	With Battery
Stand by time		2G Up to 600 hrs 3G Up to 500 hrs	@ Paging Period 5 (2G) @ DRX 7 (3G)
Charging time		Within 3 hrs	@ Power Off / 1500mAh
Talk time		2G Up to 5 hrs 3G Up to 6.4 hrs	@ Power Level 5 (2G) @ Tx = 12dBm (3G)
RX sensitivity		WCDMA(FDD1) : -108 dBm WCDMA(FDD2) : -107.5 dBm WCDMA(FDD8) : -108 dBm EGSM : -107 dBm GSM850 : -107 dBm DCS 1800 : -107 dBm PCS 1900 : -107 dBm	
TX output power		WCDMA/ GSM/ GPRS	WCDMA : 22.5dBm/3.84MHz,+1/- 3dBm EGSM : 32.5dBm GSM850 : 32.5 dBm DCS1800 : 29.5 dBm PCS 1900: 29.5 dBm
EDGE compatibility		GPRS Class 12	
SIM card type	EDGE Class 12		Class3(WCDMA) Class4 (EGSM) Class4 (GSM850) Class1 (PCS) Class1 (DCS)
	Plug-In SIM 3V /1.8V		E2 (GSM900) E2 (PCS) E2 (DCS)
Display		Main LCD TFT Main LCD(3 inch, 240 x 400)	
Built-in Camera		5M CMOS Camera CMOS Camera (VGA)	
Status Indicator		Yes	
Keypad		Touch Screen Navigation Key : Optical Joystick Side Key : 5	Side Key : Power&Lock, Volume up/down Multitasking, Camera
ANT		Main : Internal Fixed Type	
System connector		5 Pin u-USB	
Ear Phone Jack		12x18 Oval Type (Speaker/Receiver dual mode)	

2. PERFORMANCE

PC synchronization	Yes	
Memory	NAND Flash : 4Gb SDRAM : 2Gb	
Speech coding	FR, EFR, HR, AMR	
Vibrator	Built in Vibrator	
Blue Tooth	Bluetooth 2.1+EDR	
MIDI(for Buzzer Function)	SW Decoded 72Poly	
Music Player	MP3/ WMA/AAC/HE-AAC/EAAC+	
Video Player	MPEG4, H.263, WMV9	
Camcorder	MPEG4, H.263,	
Voice Recording	Yes	
Speaker Phone mode Support	Yes	
Travel Adapter	Yes	
CDROM	Yes	
Stereo Headset	Yes	
Data Cable	Yes	
T-Flash (External Memory)	Yes (Up to 32GB)	

2. PERFORMANCE

2.5 SW Features

Function	Detail Item	O / X	Specification	Etc.
OS	OS	O	Windows Mobile 6.5	
Data	Circuit	O	Video Telephony using 64kbps CSD	
	Packet	O		
Connectivity	Infrared (IrDA)	X		
	Bluetooth	O	Ver. 2.1 + EDR	
	Wi-Fi	O	802.11 b and g	
	USB	O	Ver. 2.0 (Full Speed)	
	USB Mass storage	X		
	RS232	X		
Voice Function	Voice Recording	O		
	Voice Command	X	Digit Dial	
		X	Name Dial	
		X	Menu	
		X	Phonebook Searching	
	Answering machine	X	Driving, Meeting, user define(absent)	
Memory	User Memory	O	Total	2Gb Flash/ 1Gb DDR SDRAM + external MicroSD
		O	Total User Memory	128MB (w/o MicroSD)
		O	MMS	
		O	Pictures (Still Image & Moving Image)	
		O	MP3 (Music Contents)	
		O	Java Contents	
		O	Wallpaper	
		O	Ringtone	
		O	external memory (microSD)	support SDA2.0 specification, up to 32GB

2. PERFORMANCE

Camera (Still Capture)	Memory	O	User Memory + MicroSD	
	Camera Module	O	5 Mega Backend ISP	
	Auto Focus	O	Still Mode AF	
	Digital Zoom	O	2X	
	Capture Resolution	O	320x240(QVGA)/ 640x480(VGA) / 1280x960(1M) / 1600x1200(2M) / 2048x1536(3M) / 2560x1920(5M)	
	Continuous Shot	O	320x240 Only	
	Quality	O	Standard/Fine/Superfine	
	Preview Image	O	QVGA(320 X 240) & Full Screen(340 X 240)	
	TV-Out	X		
	Flash	X	Not Available	
	Filter	O	None/Negative/Sepia/Mono/Aqua/Emboss/Sketch/Red/Green/Solarize	
	Timer	O	Off / 3 secs / 5 secs/10 secs	
	JPEG Encoding	O	JPEG	
		X	Thumbnail	
		O	320x240/640x480/1280x960/1600x1200/2048x1536/2560x1920	
	JPEG Decoding	O	JPEG	
		O	Min, Max	Supported by LGCamera Gallery, LG My Stuff & MS Pictures and Videos
	Panorama Shot	O	Up to 3 images (1600x480)	
	Album&Slide show	O	Slide show	Supported by LG My Stuff & MS Pictures and Videos

2. PERFORMANCE

Camera (Movie Capture)	Movie Resolution	O	400x240,320x240,176x144,128x96	
	Filter	O	Same as the Still Capture	
	Quality	O	Same as the Still Capture	
	MPEG Visual Bit Rate	O	350,284,199 Kbps	
	Audio Encode	O	AMR-NB	
	Audio Decode	O	AMR,AAC-LC	Supported by Windows media
	Movie Recode	O	Recode, Stop	
	Movie Playback	O	Play, Stop, Pause	Supported by Windows media
	Stream Format (Mux)	O	3gp	
	Stream Format (Demux)	O	3gp	
	Recoding Time	O	Real Time Recoding	
	TV-Out	X		
Audio Multimedia	Voice Codec	O	AMR	
	AAC /AAC+/ EAAC+	O		
	MP3, WAV	O		
	WMA	O		
	Midi	O	Midi Type0, Midi Type1, SP-MIDI	
	Music ringtone	O	MP3, AAC, AAC+, AAC-LC, XMF 1.01, AMR	XMF is not supported
	AMR-NB	O		
	Music player skin	X	Windows Media Player	
	FM Radio	O	USA/Japan band with RDS	
	Speakerphone	O		

2. PERFORMANCE

Multimedia	MPEG4/H.263	O		
	H.264	O		
	WMV	O	WMV9	
	Normal View	O	Moving Image Capture & Movie Contents	contents size
	Wide View	O	Full Screen mode	
	Custom DTV Zoom	X		
Other Features	File Viewer	O	doc, xls, ppt, gif, jpg	
	Macromedia Flash Lite	X	Not Available	LGE Flash Engine is specified to UI (Not compatible)
	e-Book/e-Comic Book	X	*.doc, *.jpg, *.gif	E-book reader program is not included in ROM. But user can download in internet. WM product recommend using Microsoft Reader for PPC.
	Flight Mode	O		
Internet Browser	WAP (Windows Mobile 6.0 IE Mobile)	O	version 2.0	
		O	WML1.3	
		O	XHTML1.1	
		O	HTML4.01	
Java	MIDP	O	2.1	
	J2ME support	O		
	Game & Contents	O	Downloadable	
	CLDC	O	CLDC 1.1	
Flash	Flash Game	X		

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Streaming Service	H.263+AAC/AMR-NB	O		
	MPEG4+AAC/AMR-NB	O		
	WMV9	O	Support WMV main and base profile except advanced profile	
DRM	OMA DRM	O	Forward Lock	
		O	Separate Delivery/ Superdistribution	
		O	Combined Delivery - Count-only	
OTA	OTA	X		
Display	RSSI	O	4 level	
	Battery Level	O	5 level	Yes
	RTC	O		
	Multi Language	O	depending on build language. MS limitation	
	Quick Access Mode	O	Hot key: Camera	
	PLMN/Service Indicator	O		
	Dimming Clock	O	Battery power 5s, 10s, 15s, 30s, 1min, 2min, 3min, 4min, 5min External power 1min, 2min, 3min, 4min, 5min, 6min, 7min, 8min, 9min, 10min	Battery power 5s, 10s, 15s, 30s, 1min, 2min, 3min, 4min, 5min External power 1min, 2min, 3min, 4min, 5min, 6min, 7min, 8min, 9min, 10min
	Dual Clock	X	Local Time / Selected Area Time	
Normal Features	Last Dialed Number	X		
	Last Received Number	X		
	Last Missed Number	X		
	Scratch Pad Memory	X		

2. PERFORMANCE

Call Management Management	Call Waiting	O	
	Call Swap	O	
	Call Retrieve	O	
	Auto Answer	X	
	Automatic Redial	X	
	Calling Line Identification	O	
	Full Call divert	X	
	Speed Dialing	O	
	Last Number Redial	X	
	Multiparty Call (Conference Call)	O	
	Explicit Call Transfer	O	
Network	Automatic Network Selection	O	
	Manual Network Selection	O	
	Network Service Status	O	
DTMF	DTMF Signaling	O	
	DTMF Enable & Disable	X	
Audio	Key Tone Volume	O	6 Level (Include Mute)
	Ring Tone Volume	O	6 Level (Include Mute)
	Ring Tone Pattern	O	
	Ring Type Silent	O	Vibrator & Ring (Indicator)
	Earpiece Volume	O	6 Level (Include Mute)
	Mute	O	
Cell Broadcast	Read Cell Broadcast	O	
	Cell Broadcast Categories	X	
	Cell Broadcast Message Language	O	Supports filtering with language IDs (German,English,Italian,French,Spanish,Dutch,Swedish,Danish,Portuguese,Finnish,Norwegian,Greek,Turkish,Hungarian,Polish,Czech)

2. PERFORMANCE

Phone Book	Entry	O		
	Field	O	Home,Office,Mobile,e-Mail,Fax, User define, etc	
	Numeric Store and Recall	O		
	Alphabetic Store	O		
	Alphabetic Recall	O		
	Scroll by alphabetic or numeric order	O		
	Last Number Dialed	O		
	Last Number Missed	O		
	Last Number Received	O		
	Copy & Move	O		
	Fixed Dial Number	X		
	Barred Dial Number	X		
	Service Dial Number	X		
	Email Entry	O		
	Picture ID	O	Relating Photo caller ID	
	My Name card	O	Bluetooth transmission (OPP)	
Call Cost	Last Call Timer	X		
	Last Call Charge Units	X		
	Total Call Timer	X		
	Total Charge Units	X		
	Visible, Audible Call Time/Cost Indication	X		

Supp. Services	Call Forwarding	O	All Incoming Calls,	
		O	No Reply	
		O	On Busy,	
		O	Not reachable	
	Call Barring	O	All Outgoing Calls,	
		O	International Calls,	
		O	Calls except to Home Country incoming Calls,	
		O	All incoming Calls when roaming	
SIM	Conference Call	O	up to 5 calls	
	Plug In Type	O		
	SIM Lock	O		
	SIM Toolkit	O		
	Prepaid SIM Operation	O		

2. PERFORMANCE

Short Messaging	Read Message	O	EMS Not Support	
	Write and Edit Message	O		
	Send and Receive Message	O		
	Reply to Message	O		
	Forward Message	O		
	Extract Number from Message	X		
	Message Status	O		
	Message Unread Indicator	O		
	Settable Message Center Number,	O		
	Reply Path and Validity			
	Visible and Audible Message Receive Alerting	O		
	Voice Mail	O		
	Settable Voice Mail Center Number	O		
	Message Protocol	O		
	Message Overflow Indicator	O		
	Message Center Number	O		
	Help Menu	X		
Multimedia Messaging	Picture Attachable	O		Max 300kbyte
	Moving Picture Attachable	O	Video MMS	Max 300kbyte
	Voice Attachable	O	AMR	
	Help Menu	X		
	Others	O		

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Instant Messaging Service	IM	O	Windows Live Messenger client	
	PC Compatable	O		
	Menu Option	O		
E-Mail	Protocol	O	IMAP4	
		O	SMTP	
		O	POP3	
		X	Help Menu	
Voice Instant Messaging Service	PTT	X	Full Duplex	
		X	Half Duplex	
	Menu Option	X	Grouping	
		X	Status List	
		X	Help	
		X	Others	
Sound Contents	Wallpaper	O		
	Screen Saver	X		
	Ringtones	O		
	Karaoke	X		
	Stutter Sound	O		
	Flip tone	X		
	Button tone	O	can be enable or disable button press sound.	
	Others	X		

2. PERFORMANCE

Miscellaneous Function	Development & Test Facility	X		
	Field Test Facility	X		
	Display Software Version	O		
	IMEI	O	*#06#	
Text Input	Language	O		
	Predictive word input	O	T9 predictive supported.	
Scheduler	Schedule	O		
	To Do List	O		
	Memo	O		
	D-day counter	X		
	Send via Bluetooth	O		
World Time	Setting Local Time	O		
	Display Two Number of Cities Time	X	Dual clock	
	Daylight saving	O		
Unit converter		X		
Stop watch		O		
Calculator	Calculation	O		
PC Sync	Phone Book Sync	O	supported by MS ActiveSync	
	Message Sync	O	supported by MS ActiveSync	
	Multimedia Contents Sync	O	supported by MS ActiveSync	
	Scheduler Sync	O	supported by MS ActiveSync	
Sync ML	DS	X		
	DM	X		

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Game		O	bubble breaker, Soitaire	
Menu	Quick Access Mode (Profile)	O		
External Interface	Electrical Man Machine Interface	X		
	Development and Test Facility	X		
Handset	Restore Factory Setting	O		
	Read Software Version	O		
	Battery Charging Mode	O	USB/ TA Charging	USB/ TA Charging
Security	Emergency Call	O		
	Handset Lock	O		
	Security Code	O		
	SIM Lock	O		
	Key guard	X		
Real Time Clock	12/24 hour	X		
	Calendar	O		
	Time Zone	O		
	Alarm Manager	O		
	Dimming Clock	O	Battery power 5s, 10s, 15s, 30s, 1min, 2min, 3min, 4min, 5min External power 1min, 2min, 3min, 4min, 5min, 6min, 7min, 8min, 9min, 10min	Battery power 5s, 10s, 15s, 30s, 1min, 2min, 3min, 4min, 5min External power 1min, 2min, 3min, 4min, 5min, 6min, 7min, 8min, 9min, 10min
	Power-off Alarm	X		
	On Alarm Event	O	Display	

2. PERFORMANCE

Game		O	bubble breaker, Soitaire	
Menu	Quick Access Mode (Profile)	O		
External Interface	Electrical Machine Interface	X		
	Development and Test Facility	X		
Handset	Restore Factory Setting	O		
	Read Software Version	O		
	Battery Charging Mode	O	USB/ TA Charging	USB/ TA Charging
Security	Emergency Call	O		
	Handset Lock	O		
	Security Code	O		
	SIM Lock	O		
	Key guard	X		
Real Time Clock	12/24 hour	X		
	Calendar	O		
	Time Zone	O		
	Alarm Manager	O		
	Dimming Clock	O	Battery power 5s, 10s, 15s, 30s, 1min, 2min, 3min, 4min, 5min External power 1min, 2min, 3min, 4min, 5min, 6min, 7min, 8min, 9min, 10min	Battery power 5s, 10s, 15s, 30s, 1min, 2min, 3min, 4min, 5min External power 1min, 2min, 3min, 4min, 5min, 6min, 7min, 8min, 9min, 10min
	Power-off Alarm	X		
	On Alarm Event	O	Display	

2. PERFORMANCE

2.6 HW SPEC.

1) GSM transceiver specification

Item	Specification
Phase Error	Rms : 5° Peak : 20 °
Frequency Error	GSM : 0.1 ppm DCS/PCS : 0.1 ppm
EMC(Radiated Spurious Emission Disturbance)	GSM/DCS : < -28dBm
Transmitter Output power and Burst Timing	GSM : 5dBm – 33dBm ± 3dB DCS/PCS : 0dBm – 30dBm ± 3dB
Burst Timing	<3.69us
Spectrum due to modulation out to less than 1800kHz offset	200kHz : -36dBm 600kHz : -51dBm/-56dBm
Spectrum due to modulation out to larger than 1800kHz offset to the edge of the transmit band	GSM : 1800-3000kHz : < -63dBc(-46dBm) 3000kHz-6000kHz : < -65dBc(-46dBm) 6000kHz < : < -71dBc(-46dBm) DCS : 1800-3000kHz : < -65dBc(-51dBm) 6000kHz < : < -73dBc(-51dBm)
Spectrum due to switching transient	400kHz : -19dBm/-22dBm(5/0), -23dBm 600kHz : -21dBm/-24dBm(5/0), -26dBm
Reference Sensitivity – TCH/FS	Class II(RBER) : -105dBm(2.439%)
Usable receiver input level range	0.012(-15 - -40dBm)
Intermodulation rejection – Speech channels	± 800kHz, ± 1600kHz : -98dBm/-96dBm (2.439%)
AM Suppression - GSM : -31dBm - DCS : -29dBm	-98dBm/-96dBm (2.439%)
Timing Advance	± 0.5T

2) WCDMA transmitter specification

Item	Specification
Transmit Frequency	Band1 : 1920 MHz ~ 1980 MHz Band2 : 1850 MHz ~ 1910 MHz Band8 : 880MHz~915MHz
Maximum Output Power	+22.5 dBm / 3.84 MHz, +1 / -3 dB
Frequency Error	within ± 0.1 PPM
Open Loop Power Control	Normal Conditions : within ± 9 dB, Extreme Conditions : within ± 12 dB
Minimum Transmit Power	< -50 dBm / 3.84 MHz
Occupied Bandwidth	< 5 MHz at 3.84 Mcps (99% of power)
Adjacent Channel Leakage Power Ratio (ACLR)	> 33 dB @ ± 5 MHz, > 43 dB @ ± 10 MHz
Spurious Emissions $ f-f_c > 12.5$ MHz	< -36 dBm / 1 kHz RW @ $9 \text{ kHz} \leq f < 150 \text{ kHz}$ < -36 dBm / 10 kHz RW @ $150 \text{ kHz} \leq f < 30 \text{ MHz}$ < -36 dBm / 100 kHz RW @ $30 \text{ MHz} \leq f < 1 \text{ GHz}$ < -30 dBm / 1 MHz RW @ $1 \text{ GHz} \leq f < 12.75 \text{ GHz}$ < -60 dBm / 3.84 MHz RW @ $869 \text{ MHz} \leq f \leq 894 \text{ MHz}$ < -60 dBm / 3.84 MHz RW @ $1930 \text{ MHz} \leq f \leq 1900 \text{ MHz}$ < -60 dBm / 3.84 MHz RW @ $2110 \text{ MHz} \leq f \leq 2155 \text{ MHz}$ < -67 dBm / 100 kHz RW @ $925 \text{ MHz} \leq f \leq 935 \text{ MHz}$ < -79 dBm / 100 kHz RW @ $935 \text{ MHz} < f \leq 960 \text{ GHz}$ < -71 dBm / 100 kHz RW @ $1805 \text{ MHz} \leq f \leq 1880 \text{ MHz}$ < -41 dBm / 300 kHz RW @ $1884.5 \text{ MHz} < f < 1919.6 \text{ MHz}$
Transmit Intermodulation	< -31 dBc @ 5 MHz & < -41 dBc @ 10 MHz when Interference CW Signal Level = -40 dBc
Error Vector Magnitude	< 17.5 %, when Pout \geq -20 dBm
Peak Code Domain Error	< -15 dB at Pout \geq -20 dBm

2. PERFORMANCE

3) WCDMA receiver specification

Item	Specification																			
Receive Frequency	Band1 : 2110 ~ 2170 MHz Band2 : 1930 ~ 1990 MHz Band8 : 925~960MHz																			
Reference Sensitivity Level	Band1 : BER < 0.001 when \hat{I}_{or} = -106.7 dBm / 3.84 MHz Band8 : BER < 0.001 when \hat{I}_{or} = -103.7 dBm / 3.84 MHz																			
Maximum Input Level	BER < 0.001 when \hat{I}_{or} = -25 dBm / 3.84 MHz																			
Adjacent Channel Selectivity (ACS)	ACS > 33 dB where BER < 0.001 when \hat{I}_{or} = -92.7 dBm / 3.84 MHz & I_{oac} = -52 dBm / 3.84 MHz @ ± 5 MHz																			
Blocking Characteristic	BER < 0.001 when \hat{I}_{or} = -103.7 dBm / 3.84 MHz & $I_{blocking}$ = -56 dBm / 3.84 MHz @ $F_{uw}(\text{offset}) = \pm 10$ MHz or $I_{blocking}$ = -44 dBm / 3.84 MHz @ $F_{uw}(\text{offset}) = \pm 15$ MHz																			
Spurious Response	BER < 0.001 when \hat{I}_{or} = -103.7 dBm / 3.84 MHz & $I_{blocking}$ = -44 dBm																			
Intermodulation	BER < 0.001 when \hat{I}_{or} = -103.7 dBm / 3.84 MHz & I_{ouw1} = -46 dBm @ $F_{uw1}(\text{offset}) = \pm 10$ MHz & I_{ouw2} = -46 dBm / 3.84 MHz @ $F_{uw2}(\text{offset}) = \pm 20$ MHz																			
Spurious Emissions	< -57 dBm / 100 kHz BW @ $9 \text{ kHz} \leq f < 1 \text{ GHz}$ < -47 dBm / 1 MHz BW @ $1 \text{ GHz} \leq f \leq 12.75 \text{ GHz}$																			
Inner Loop Power Control In Uplink	Adjust output(TPC command) <table><tr><td>cmd</td><td>1dB</td><td>2dB</td><td>3dB</td></tr><tr><td>+1</td><td>+0.5/1.5</td><td>+1/3</td><td>+1.5/4</td></tr><tr><td>0</td><td>-0.5/+0.5</td><td>-0.5/+0.5</td><td>-0.5/+0.5</td></tr><tr><td>-1</td><td>-0.5/-1.5</td><td>-1/-3</td><td>-1.5/-4</td></tr></table> group(10equal command group) <table><tr><td>+1</td><td>+8/+12</td><td>+16/+24</td></tr></table>	cmd	1dB	2dB	3dB	+1	+0.5/1.5	+1/3	+1.5/4	0	-0.5/+0.5	-0.5/+0.5	-0.5/+0.5	-1	-0.5/-1.5	-1/-3	-1.5/-4	+1	+8/+12	+16/+24
cmd	1dB	2dB	3dB																	
+1	+0.5/1.5	+1/3	+1.5/4																	
0	-0.5/+0.5	-0.5/+0.5	-0.5/+0.5																	
-1	-0.5/-1.5	-1/-3	-1.5/-4																	
+1	+8/+12	+16/+24																		

2. PERFORMANCE

4) HSDPA transmitter specification

Item	Specification				
Transmit Frequency	Band1 : 1920 MHz ~ 1980 MHz Band2 : 1850 MHz ~ 1910 MHz Band8 : 880MHz~915 MHz				
Maximum Output Power	Sub-Test 1=1/15, 2=12/15 21~25dBm / 3.84 MHz 3=13/15 4=15/8 20~25dBm / 3.84 MHz 5=15/7 6=15/0 19~25dBm / 3.84 MHz				
HS-DPCCH	Sub-test in table C.10.1.4	Power step	Power step slot boundary	Power step size, P [dB]	Transmitter power step tolerance [dB]
	5	1	Start of Ack/Nack	6	+/- 2.3
		2	Start of CQI	1	+/- 0.6
		3	Middle of CQI	0	+/- 0.6
Spectrum Emission Mask	Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0				
	Frequency offset from carrier Δf		Minimum requirement		Measurement Bandwidth
	2.5 ~ 3.5 MHz		$-35-15\times(\Delta f-2.5)\text{dBc}$		30 kHz
	3.5 ~ 7.5 MHz		$-35-1\times(\Delta f-3.5)\text{dBc}$		1 MHz
	7.5 ~ 8.5 MHz		$-35-10\times(\Delta f-7.5)\text{dBc}$		1 MHz
	8.5 ~ 12.5 MHz		-49dBc		1 MHz
Adjacent Channel Leakage Power Ratio (ACLR)	Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0 > 33 dB @ ± 5 MHz > 43 dB @ ± 10 MHz				
Error Vector Magnitude	< 17.5 %, when Pout \geq -20 dBm				

5) HSDPA receiver specification

Item	Specification
Receive Frequency	Band1 : 2110 ~ 2170 MHz Band2 : 1930 ~ 1990 MHz Band8 : 925 ~ 960Hz
Maximum Input Level (BLER or R), 16QAM Only	Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0 BLER < 10% or R \geq 700kbps

2. PERFORMANCE

6) HSUPA specification

Item	Specification			
Transmit Frequency	WCDMA900 : 880 MHz ~ 915 MHz WCDMA1900 :1850MHz ~ 1910 MHz WCDMA2100 : 1920 MHz ~ 1980 MHz			
Maximum Output Power	Sub-Test 1=11/15, 2=6/15 18.8~25.7dBm / 3.84 MHz, 16.8~25.7dBm / 3.84 MHz 3=9/15, 4=2/15 17.8~25.7dBm / 3.84 MHz, 16.8~25.7dBm / 3.84 MHz 5=15/15 18.8~25.7dBm / 3.84 MHz			
Spectrum Emission Mask	Table 5.9B.1: Spectrum Emission Mask Requirement			
	Δf in MHz (Note 1)	Minimum requirement (Note 2)		Measurement bandwidth
		Relative requirement	Absolute requirement	
	2.5 - 3.5	$\left\{ -35 - 15 \cdot \left(\frac{\Delta f}{MHz} - 2.5 \right) \right\} dBc$	-71.1 dBm	30 kHz (Note 3)
	3.5 - 7.5	$\left\{ -35 - 1 \cdot \left(\frac{\Delta f}{MHz} - 3.5 \right) \right\} dBc$	-55.8 dBm	1 MHz (Note 4)
	7.5 - 8.5	$\left\{ -39 - 10 \cdot \left(\frac{\Delta f}{MHz} - 7.5 \right) \right\} dBc$	-55.8 dBm	1 MHz (Note 4)
	8.5 - 12.5 MHz	-49 dBc	-55.8 dBm	1 MHz (Note 4)
	Note 1: Δf is the separation between the carrier frequency and the centre of the measurement bandwidth.			
	Note 2: The minimum requirement is calculated from the relative requirement or the absolute requirement, whichever is the higher power.			
Note 3: The first and last measurement position with a 30 kHz filter is at Δf equals to 2.515 MHz and 3.485 MHz.				
Note 4: The first and last measurement position with a 1 MHz filter is at Δf equals to 4 MHz and 12 MHz.				
Adjacent Channel Leakage Power (ACLR)	Channel Ratio	Table 5.10B.2: UE ACLR		
		Power Class	UE channel	ACLR limit
		3	+5 MHz or -5 MHz	32.2 dB
		3	+10 MHz or -10 MHz	42.2 dB
		4	+5 MHz or -5 MHz	32.2 dB
		4	+10 MHz or -10 MHz	42.2 dB

7) WLAN 802.11b transceiver specification

Item	Specification
Transmit Frequency	2400 MHz ~ 2483.5 MHz (CH1~CH13)
Tx Power	$\leq 20\text{dBm}$ under (Europe), $\leq 30\text{dBm}$ under (USA)
Frequency Tolerance	within ± 25 PPM
Chip clock Frequency Tolerance	within ± 25 PPM
Spectrum Mask	≤ -30 @ $f_c - 22\text{MHz} < f < f_c - 11\text{MHz}$ and $f_c + 11\text{MHz} < f < f_c + 22\text{MHz}$ ≤ -50 @ $f < f_c - 22\text{MHz}$ and $f > f_c + 22\text{MHz}$
Power ramp on/off time	$\leq 2\mu\text{s}$
Carrier Suppression	$\leq -15\text{dB}$
Modulation Accuracy (Peak EVM)	$\leq 35\%$
Spurious Emissions	$< -36\text{ dBm}$ @ 30MHz ~ 1GHz $< -30\text{ dBm}$ above @ 1GHz ~ 12.75GHz $< -47\text{ dBm}$ @ 1.8GHz ~ 1.9GHz $< -47\text{ dBm}$ @ 5.15GHz ~ 5.3GHz
Rx Min input Sensitivity	$\leq -76\text{dBm}$ (1Mbps,2Mbps,5.5Mbps,11Mbps) @ FER $\leq 8\%$
Rx Max input Sensitivity	$\geq -10\text{dBm}$ (1Mbps,2Mbps,5.5Mbps,11Mbps) @ FER $\leq 8\%$
Rx Adjacent Channel Rejection	$\geq 35\text{dB}$ @ FER $\leq 8\%$, interference input signal -70dBm @ $f_c \pm 25\text{MHz}$ (11Mbps)

2. PERFORMANCE

8) WLAN 802.11g transceiver specification

Item	Specification
Transmit Frequency	2400 MHz ~ 2483.5 MHz (CH1~CH13)
Tx Power Level	≤ 20dBm under (Europe), ≤ 30dBm under (USA)
Frequency Tolerance	within ±25 PPM
Chip clock Frequency Tolerance	within ±25 PPM
Spectrum Mask	≤ -20 @ ±11MHz offset (9Mhz ~ 11MHz) ≤ -28 @ ±20MHz offset (11MHz ~ 20Mhz) ≤ -40 @ ±30MHz offset (20MHz ~ 30Mhz)
Transmitter constellation error (rms EVM)	≤ -5dB
Spurious Emissions	< -36 dBm @ 30MHz ~ 1GHz < -30 dBm above @ 1GHz ~ 12.75GHz < -47 dBm @ 1.8GHz ~ 1.9GHz < -47 dBm @ 5.15GHz ~ 5.3GHz
Rx Min input Sensitivity	PER ≤ 10% -82dBm@6Mbps, -81dBm@9Mbps, -79dBm@12Mbps -77dBm@18Mbps, -74dBm@24Mbps, -70dBm@36Mbps -66dBm@48Mbps, -65dBm@54Mbps
Rx Max input Sensitivity	≥ -20dBm(6,9,12,18,24,36,48,54Mbps) @ PER ≤ 10%
Rx Adjacent Channel Rejection	PER ≤ 10%, ACR ≥ 16dB@6Mbps, ACR ≥ 15dB@9Mbps, ACR ≥ 13dB@12Mbps, ACR ≥ 11dB@18Mbps, ACR ≥ 8dB@24Mbps, ACR ≥ 4dB@36Mbps ACR ≥ 0dB@48Mbps, ACR ≥ -1dB@54Mbps ※ACR shall be measured by setting the desired signal's strength 3 dB above the rate-dependent sensitivity specified in min input sensitivity

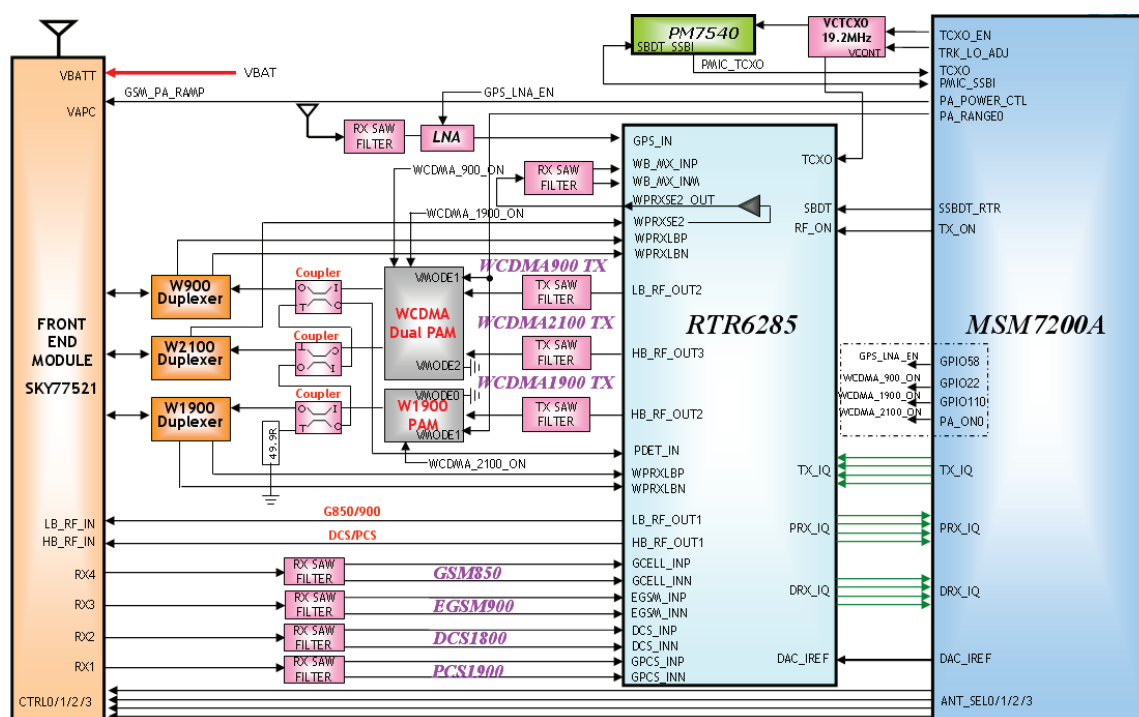
9) GPS receiver specification

Item	Specification
Receive Frequency	1574.42 MHz ~ 1576.42 MHz
Minimum Sensitivity	1 satellite ≥ -142dBm, 7 satellites ≥ -147dBm at coarse time aiding

3. TECHNICAL BRIEF

3.1. GENERAL DESCRIPTION

The GM750 supports UMTS-900(Band VIII), UMTS-1900(Band II), UMTS-2100 (Band I), GSM-850, GSM-900, GSM-1800, and GSM-1900 based GSM/GPRS/EDGE/UMTS. All receivers and the UMTS transmitter use the radioOne 1 Zero-IF architecture to eliminate intermediate frequencies, directly converting signals between RF and baseband. The quad-band GSM transmitters use a baseband-to-IF up-conversion followed by an offset phase-locked loop that translates the GMSK-modulated or 8-PSK-modulated signal to RF.



[Figure 1-1] Block diagram of RF part

A generic, high-level functional block diagram of GM750 is shown in Figure 1-1. One antenna collects base station forward link signals and radiates handset reverse link signals. The antenna connects with receive and transmit paths through a SKY77521 (FEM, Front End Module + GSM PAM). The UMTS receive paths each include an LNA, an RF band-pass filter, and a downconverter that translate the signal directly from RF-to-baseband using radioOne ZIF techniques. The RFIC's RX analog baseband outputs, for the receive chains, connect to the MSM IC. The UMTS and GSM RX baseband outputs share the same inputs to the MSM IC.

¹ QUALCOMM's branded chipset that implements a Zero-IF radio architecture.

3. Technical Brief

For the transmit chains, the RTR6285 IC directly translates the TX baseband signals (from the MSM device) to an RF signal using an internal LO generated by integrated on-chip PLL and VCO. The RTR6285 IC outputs deliver fairly high-level RF signals that are first filtered by TX SAWs and then amplified by their respective UMTS PAs.

In the GSM receive path, the received RF signals are applied through their band-pass filters and down-converted directly to baseband in the RTR6285 transceiver IC. These baseband outputs are shared with the UMTS receiver and routed to the MSM IC for further signal processing.

The GSM/EDGE transmit path employs one stage of up-conversion and, in order to improve efficiency, is divided into phase and amplitude components to produce an open-loop Polar topology:

1. The on-chip quadrature up-converter translates the GMSK-modulated signal or 8-PSK modulated signal, to a constant envelope phase signal at RF;
2. The amplitude-modulated (AM) component is applied to the ramping control pin of Polar power amplifier from a DAC within the MSM

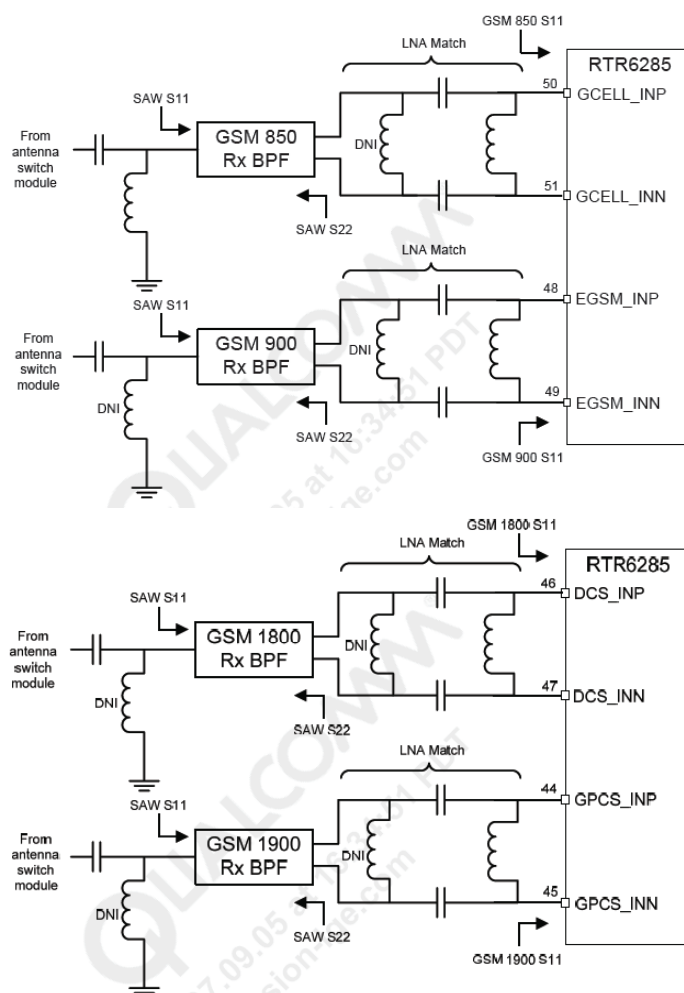
GM750 power supply voltages are managed and regulated by the PM7540 Power Management IC. This versatile device integrates all wireless handset power management, general housekeeping, and user interface support functions into a single mixed signal IC. It monitors and controls the external power source and coordinates battery recharging while maintaining the handset supply voltages using low dropout, programmable regulators.

The device's general housekeeping functions include an ADC and analog multiplexer circuit for monitoring on-chip voltage sources, charging status, and current flow, as well as user-defined off-chip variables such as temperature, RF output power, and battery ID. Various oscillator, clock, and counter circuits support IC and higher-level handset functions. Key parameters such as under-voltage lockout and crystal oscillator signal presence are monitored to protect against detrimental conditions.

3.2. GSM MODE

3.2.1 GSM RECEIVER

The GSM-850, GSM-900, GSM-1800, and GSM-1900 receiver inputs of RTR6285 are connected to the transceiver front-end circuits (switch module) through SAW filters. GSM-850, GSM-900, GSM-1800, and GSM-1900 receiver inputs use differential configurations to improve common-mode rejection and second-order non-linearity performance as shown in Figure 1-2. The balance between the complementary signals is critical and must be maintained from the RF filter outputs all the way into the IC pins

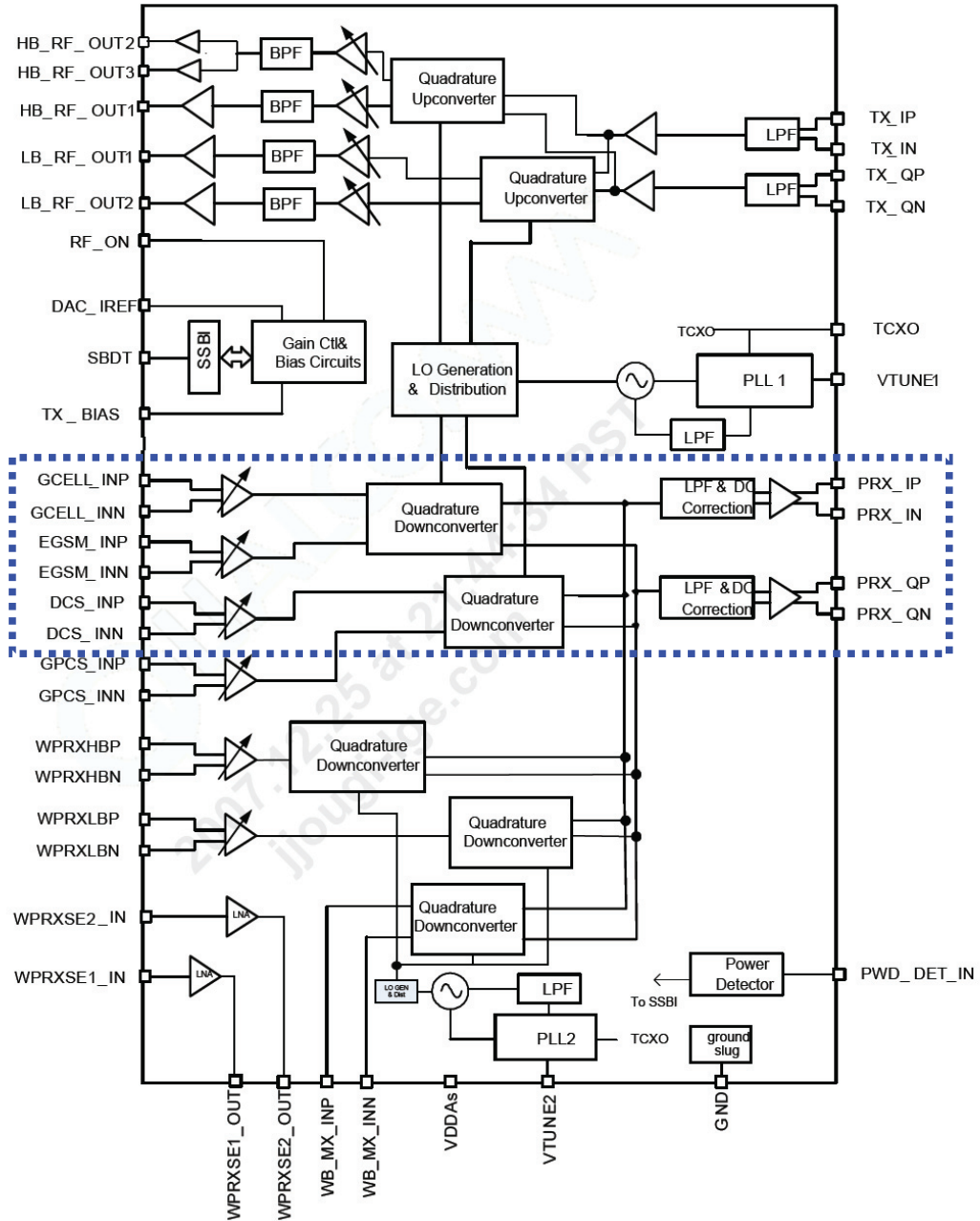


[Figure 1-2] GSM Receiver Inputs Topologies

3. Technical Brief

Since GSM-850, GSM-900, GSM-1800, and GSM-1900 signals are time-division duplex (the handset can only receive or transmit at one time), switches ~~gain and noise~~ separate RX and TX signals in place of frequency duplexers – this is accomplished in the switch module. The GSM-850, GSM-900, GSM-1800, and GSM-1900 receive signals ~~is~~ are routed to the RTR6285 through saw filters and matching ~~networks~~ ~~network~~ that transform single-ended 50-Ω sources to differential impedances optimized for gain and noise figure. The RTR input uses a differential configuration to improve second-order inter-modulation and common mode rejection performance. The RTR6285 input stages include MSM-controlled gain adjustments that maximize receiver dynamic range.

The amplifier outputs drive the RF ports of the quadrature RF-to-baseband downconverters. The downconverted baseband outputs are multiplexed and routed to lowpass filters (one I and one Q) having passband and stopband characteristics suitable for GMSK or 8-PSK processing. These filter circuits include DC offset corrections. The filter outputs are buffered and passed on to the MSM7200A IC for further processing as shown in Figure 1-3.

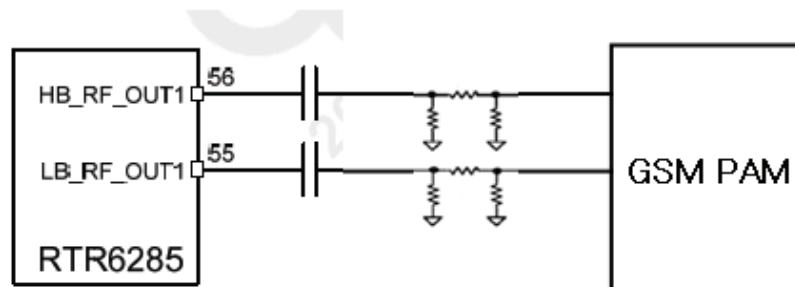


[Figure 1-3] RTR6285 RX feature

3. Technical Brief

3.2.2 GSM TRANSMITTER

The RTR6285 transmitter outputs(HB_RF_OUT1 and LB_RF_OUT1) include on-chip output matching inductors. 50ohm output impedance is achieved by adding a series capacitor at the output pins. The capacitor value may be optimized for specific applications and PCB characteristics based on pass-band symmetry about the band center frequency as shown in Figure 1-3.



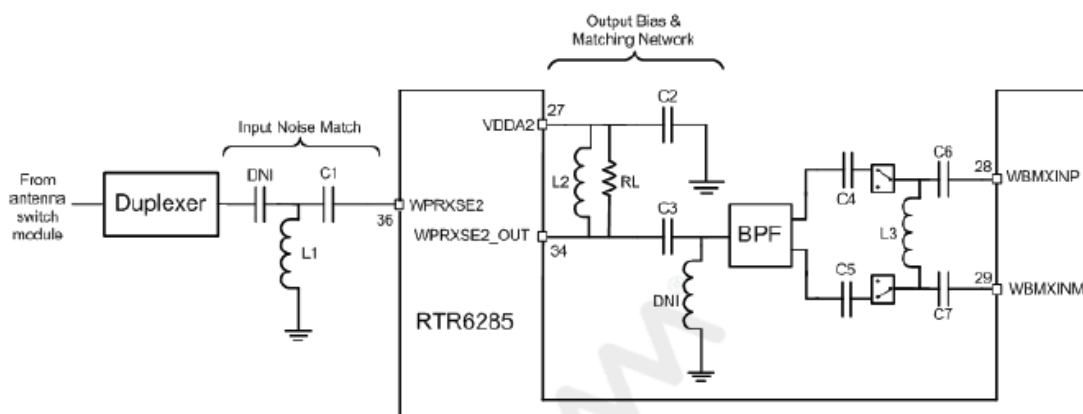
[Figure 1-4] GSM Transmitter Outputs Topologies

The RTR6285 IC is able to support GSM850/GSM 900 and GSM 1800/1900 mode transmitting. This design guideline shows a quad-band GSM application. Both high-band and low band outputs are followed by resistive pads to ensure that the load presented to the outputs remains close to 50ohm.

3.3. UMTS MODE

3.3.1 UMTS RECEIVER

The UMTS duplexer receiver output is routed to LNA circuits within the RTR6285 device as shown in Figure 1-5. The UMTS RX input is provided with an on-chip LNA that amplifies the signal before a second stage filter that provides differential downconverter as shown in Figure 1-5. This second stage input is configured differentially to optimize second-order intermodulation and common mode rejection performance. The gain of the UMTS front end amplifier and the UMTS second stage differential amplifier are adjustable, under MSM control, to extend the dynamic range of the receivers. The second stage UMTS RX amplifiers drive the RF ports of the quadrature RF-to-baseband downconverters. The downconverted UMTS RX baseband outputs are routed to lowpass filters having passband and stopband characteristics suitable for UMTS RX processing. These filter circuits allow DC offset corrections, and their differential outputs are buffered to interface shared with GSM RX to the MSM IC. The UMTS baseband outputs are turned off when the RTR6285 is downconverting GSM signals and on when the UMTS is operating.



[Figure 1-5] UMTS Receiver Inputs Topologies

3. Technical Brief

3.3.2 UMTS TRANSMITTER

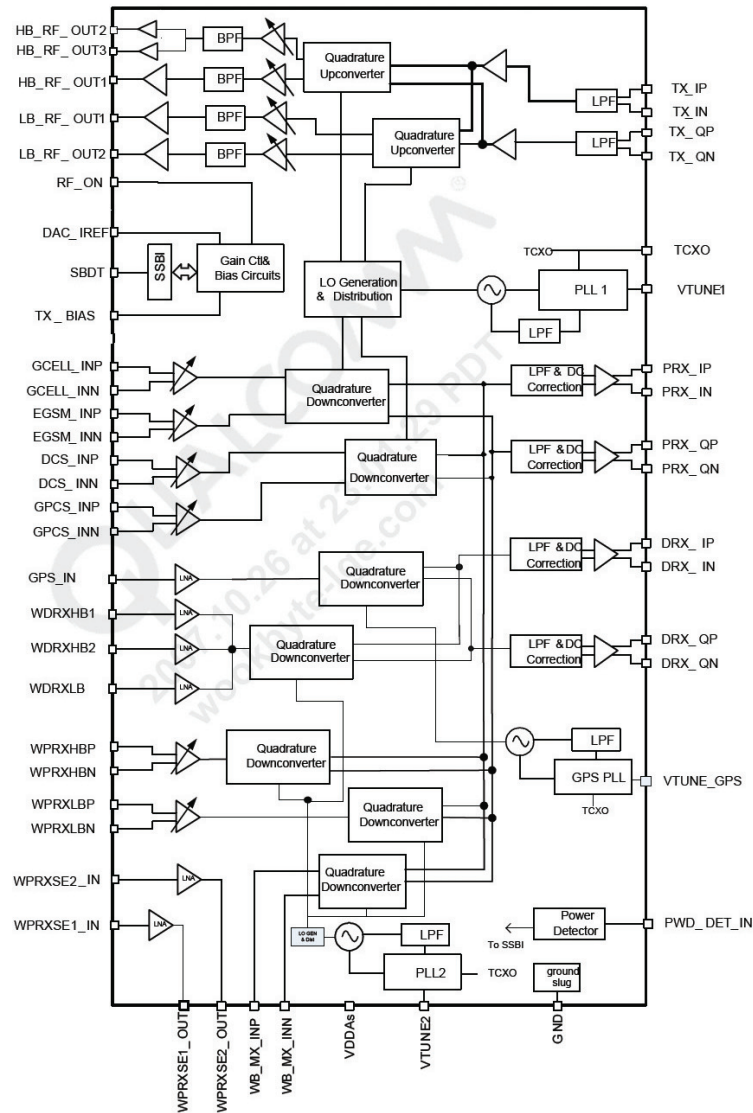
The UMTS TX path begins with differential baseband signals (I and Q) from the MSM device. These analog input signals are amplified, filtered, and applied to the quadrature up-converter mixers. The up-converter output is amplified by multiple variable gain stages that provide transmit AGC control. The AGC output is filtered and applied to the driver amplifier; this output stage includes an integrated matching inductor that simplifies the external matching network to a single series capacitor to achieve the desired 50- Ω interface.

The RTR6285 UMTS output is routed to its power amplifier through a bandpass filter, and delivers fairly high-level signals that are filtered and applied to the PA. Transmit power is delivered from the duplexer to the antenna through the switch module.

The transceiver LO synthesizer is contained within the RTR6285 IC with the exception of the off-chip loop filter components and the VC-TCXO. This provides a simplified design for multimode applications. The PLL circuits include a reference divider, phase detector, charge pump, feedback divider, and digital logic generator.

UMTS TX Using only PLL1, the LO generation and distribution circuits create the necessary LO signals for nine different frequency converters. The UMTS transmitter also employs the ZIF architecture to translate the signal directly from baseband to RF. This requires FLO to equal FRF, and the RTR6285 IC design achieves this without allowing FVCO to equal FRF.

The RTR6285 IC is able to support UMTS 2100/1900/1800/1700/900 and 850 mode transmitting. This design guideline shows UMTS 2100, UMTS1900 and UMTS900 applications.



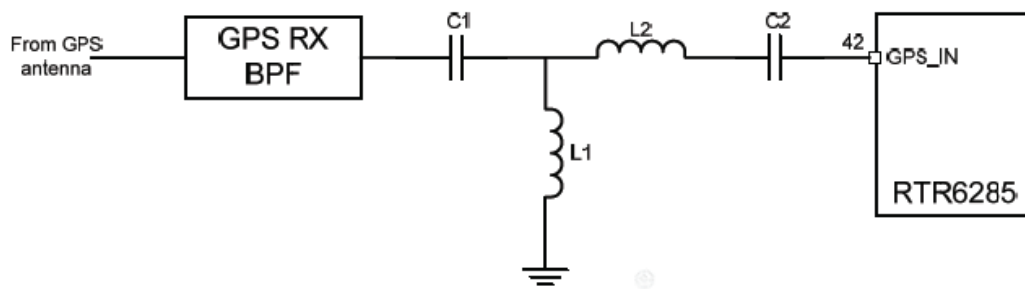
[Figure 1.6] RTR6285 IC Functional Block Diagram

3. Technical Brief

3.4. GPS MODE

3.4.1 GPS RECEIVER

The GPS receiver input employs a single-ended connection realized by this pin. The GPS input is routed from the GPS antenna switch, through a band-pass filter and then an impedance transformer circuit that optimally matches the impedance looking into the GPS LNA. The impedance transformer circuit topology is shown in Figure 1-7.



[Figure 1.7] GPS Input Network Topology

3.5. LO GENERATION and DISTRIBUTION CIRCUIT

The integrated LO generation and distribution circuits are driven by internal VCOs to support various modes to yield highly flexible quadrature LO outputs that drive all GSM/EDGE, UMTS band and GPS upconverters and downconverters; with the help of these LO generation and distribution circuits, true zero-IF architecture is employed in all GSM and UMTS band receivers and transmitters to translate the signal directly from RF-to-baseband and from baseband-to-RF.

Two fully functional fraction-N synthesizers, including VCOs and loop filters, are integrated within the RTR6285 IC. In addition, the RTR6285 has a third synthesizer used for GPS operation.

The first synthesizer (PLL1) in the RTR6285 creates the transceiver Los that support the UMTS transmitter, and all four GSM band receivers and transmitters including: GSM850, GSM900, GSM1800, and GSM1900. The second synthesizer (PLL2) in the RTR6285 IC provides the LO for the UMTS primary receiver. For the RTR6285 IC only, the second synthesizer also provides the LO for the secondary UMTS receiver. The third synthesizer (PLL3), only in the RTR6285 IC,

provides the LO for the GPS receiver. An external TCXO input signal is required to provide the synthesizer frequency reference to which the PLL is phase and frequency locked. The RTR6285 ICs integrate most of the PLL loop filter components on-chip except for three off-chip loop filter-series capacitors, which significantly reduces off-chip component requirement. With the integrated fractional-N PLL synthesizers, the RTR6285 ICs have the advantage of more flexible loop bandwidth control, fast lock time, and low-integrated phase error.

3. Technical Brief

3.6. OFF-CHIP RF COMPONENTS

3.6.1 ALM-2412(U104:GPS LNA)

The ALM-2412 is an LNA module, with integrated filter, designed for GPS band applications at 1.575GHz. The LNA uses AVAGO Technologies' proprietary GaAs Enhancement-mode pHEMT process to achieve high gain with very low noise figure and high linearity. Noise figure distribution is very tightly controlled. A CMOS-compatible shutdown pin is included either for turning the LNA on/off, or for current adjustment. The integrated filter utilizes an Avago Technologies' leading edge FBAR filter for exceptional rejection at Cell/PCS Band frequencies. The ALM-2412 is useable down to 1V operation. It achieves low noise figure, high gain and linearity even at 1V, making it suitable for use in critical low-power GPS applications or during low-battery situations.

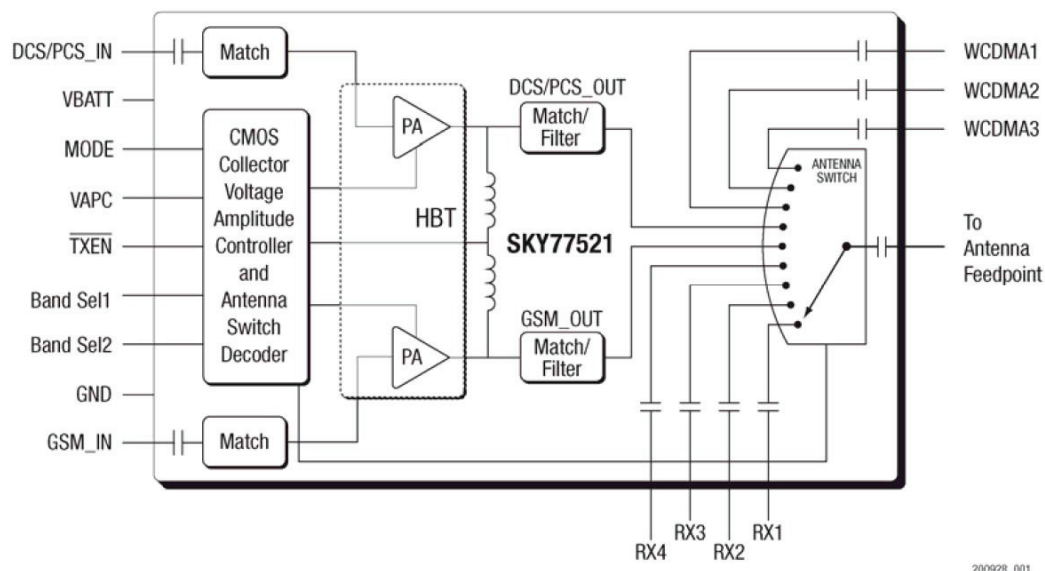
1.6.2 SKY77521(U107:FEM + GSM Quad-Band PAM)

SKY77521 is transmit and receive Front End Module(FEM) designed in a very low profile (1mm), compact form factor for quad-band cellular handsets comprising GSM850/900, DCS1800, and PCS1900 operation – a complete transmit VCO-to-Antenna and Antenna-to-receive SAW filter solution. The FEM also supports Class 12 General Packet Radio Service (GPRS) multi-slot operation and EDGE Polar Modulation. WCDMA switch-through support is provided by three dedicated high-linearity ports.

ANTENNA SWITCH MODULE LOGIC(SKY77521)

	ANT_SEL0	ANT_SEL1	ANT_SEL2	ANT_SEL3
GSM850/EGSM TX	LOW	HIGH	LOW	LOW
PCN/PCS TX	HIGH	HIGH	LOW	LOW
WB 850/900	LOW	LOW	HIGH	LOW
WB 1900	HIGH	LOW	HIGH	LOW
WB 2100	HIGH	LOW	LOW	LOW
GSM850 RX	HIGH	LOW	LOW(X)	HIGH
EGSM RX	HIGH	HIGH	LOW(X)	HIGH
DCN RX	LOW	HIGH	LOW(X)	HIGH
PCS RX	LOW	LOW	LOW(X)	HIGH

[Table 1] Antenna Switch Module Logic



[Figure 1.8] SKY77521 Functional Block Diagram.

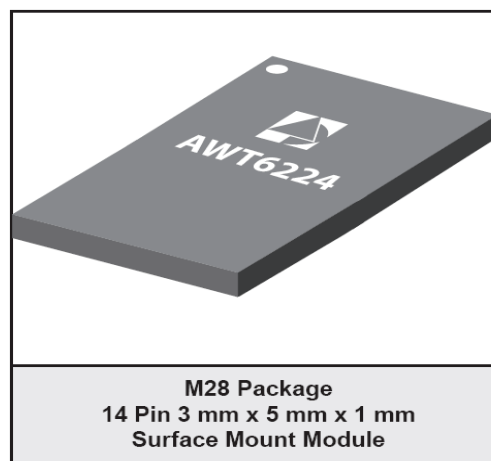
3.6.3 W-CDMA Dual-Band POWER AMPLIFIER (U101: AWT6224R)

FEATURES

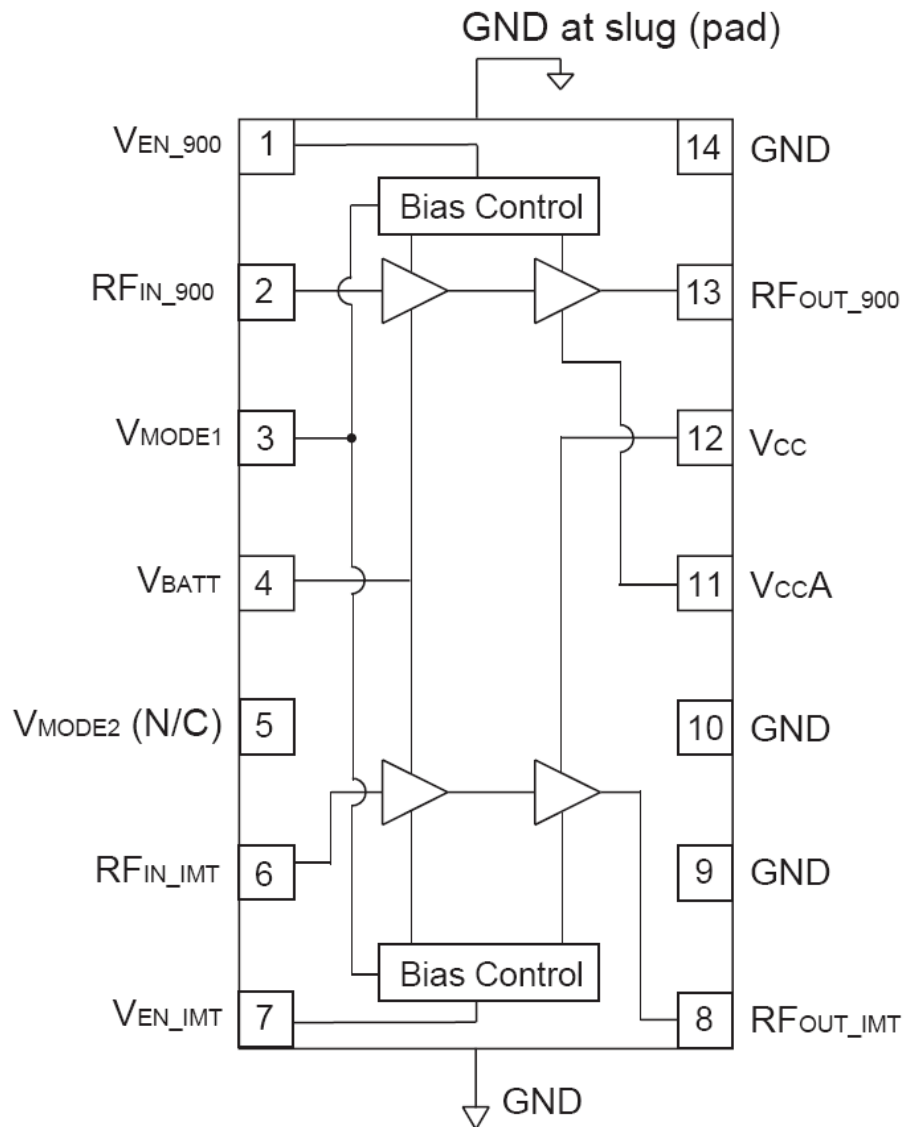
- InGaP HBT Technology
- High Efficiency:
20 % @ +16 dBm P_{OUT}
(without DC/DC Converter)
40 % @ maximum P_{OUT}
- Low Quiescent Current: 8 mA
- Internal Voltage Regulation
- Common V_{MODE} Control Line
- Simplified V_{CC} Bus PCB routing
- Reduced External Component Count
- Low Profile Surface Mount Package: 1 mm
- HSDPA Compliant
- RoHS Compliant Package, 250 °C MSL-3

APPLICATIONS

- Dual-band UMTS Band 1 and 8 Wireless Handsets and Datacards



3. Technical Brief

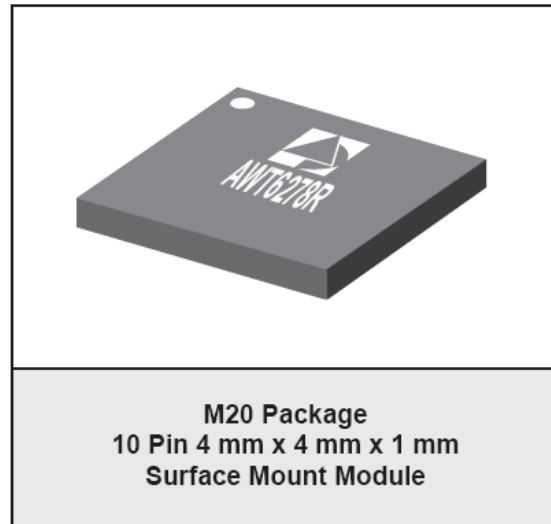


[Figure 1.9] AWT6224R Functional Block Diagram.

3.6.4 W-CDMA 1900 POWER AMPLIFIER (U102: AWT6278R)

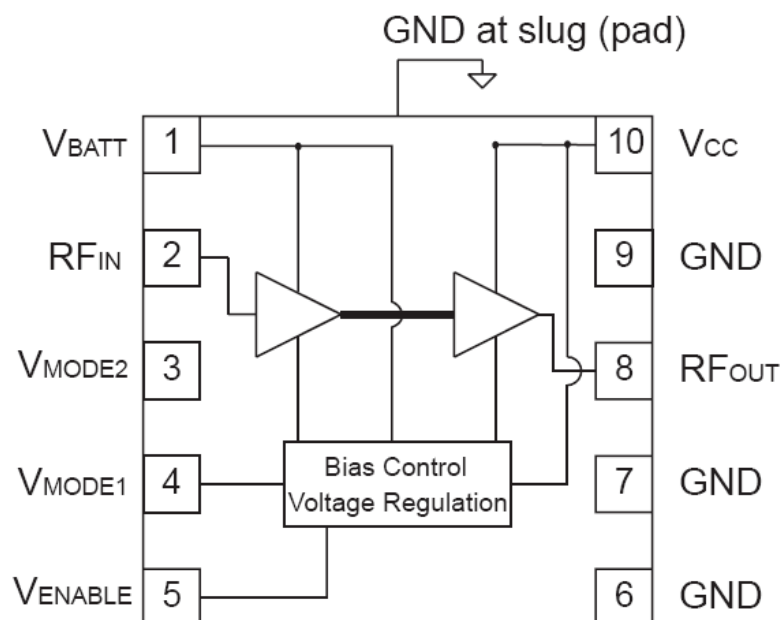
FEATURES

- InGaP HBT Technology
- High Efficiency:
41 % @ $P_{OUT} = +29.5$ dBm
21 % @ $P_{OUT} = +16$ dBm
9 % @ $P_{OUT} = +8$ dBm
- Low Quiescent Current: 8 mA
- Low Leakage Current in Shutdown Mode: $<1 \mu A$
- Internal Voltage Regulator Eliminates the Need for External Reference Voltage
- Optimized for a 50Ω System
- Low Profile Miniature Surface Mount Package
- RoHS Compliant Package, 250 °C MSL-3
- HSPA Compliant (no backoff)



APPLICATIONS

- WCDMA/HSPA PCS-Band Wireless Handsets and Data Devices



[Figure 1.10] AWT6278R Functional Block Diagram.

3. BB Technical Description

3.7 Digital Baseband(DBB/MSM7200A)

3.7.1 General Description

A. Features(MSM7200A)

- Support for multimode operation – WCDMA(UMTS),GSM/GPRS,EDGE, HSDPA
 - The ARM1136-J microprocessor can operate at up to 528 MHz.
 - The ARM926EJ-S microprocessor can operate up to 256 MHz.
 - Internal 256M Bits stacked DDR memory.
 - Java hardware acceleration for faster Java-based games and other applets.
 - Supports low-power, low-frequency crystal to enable TCXO shutoff.
 - Integrated USIM Controller for direct interface to USIM card
 - Software-controlled power management feature
 - Integrated Bluetooth 2.0 baseband processor for wireless connectivity to peripherals
 - High-speed, serial mobile-display, digital interface that optimizes the interconnection cost between the MSM device and the LCD panel
 - Receive chain diversity support for WCDMA, providing improved capacity and data throughput
 - USB OTG core supports both slave and limited host functionality
 - High-speed USB link
 - Integrated wideband stereo CODEC for digital audio applications
 - Direct interface to digital camera module with video front end (VFE) image processing
 - Vocoder support (GSM-HR, FR, EFR, AMR, W-AMR, and 4GV)
 - Advanced 15 × 15 × 1.4 mm, 0.5 mm pitch, 543-pin lead-free CSP packaging technology
- HSDPA Features
 - supports release 5, December 2004 standard for HSDPA
 - HSDPA enables PS data speeds up to 7.2 Mbps on the downlink
- WCDMA Features
 - supports release 99 June 2004 of the W-CDMA FDD standard
 - PS data rates supporting 384kbps DL / 384kbps UL
 - CS data rates supporting 64kbps DL / 64kbps UL
 - AMR (all rates)
- GSM Features
 - Voice features (FR,EFR,AMR,HR)
 - Circuit-switched data features(9.6K,14.4K,Fax)
- GPRS Features
 - Simple Class A operation
 - Multi-slot class 12 data services
 - CS schemes CS1,CS2,CS3,CS4
- EDGE Features
 - EDGE E2 power class for 8PSK
 - Simple Class A, multi-slot class 12
 - Downlink/Uplink coding schemes (CS1-4, MCS1-9)
- Operation and Services
- LCD & Camera Interface
 - USIM Interface
 - Dual Memory Buses(EBI1-SDRAM & EBI2-NAND Flash)
- External Memory Interface (Micro SD)
- Data Communication
 - Bluetooth
 - Slave USB

3.2 Hardware Architecture

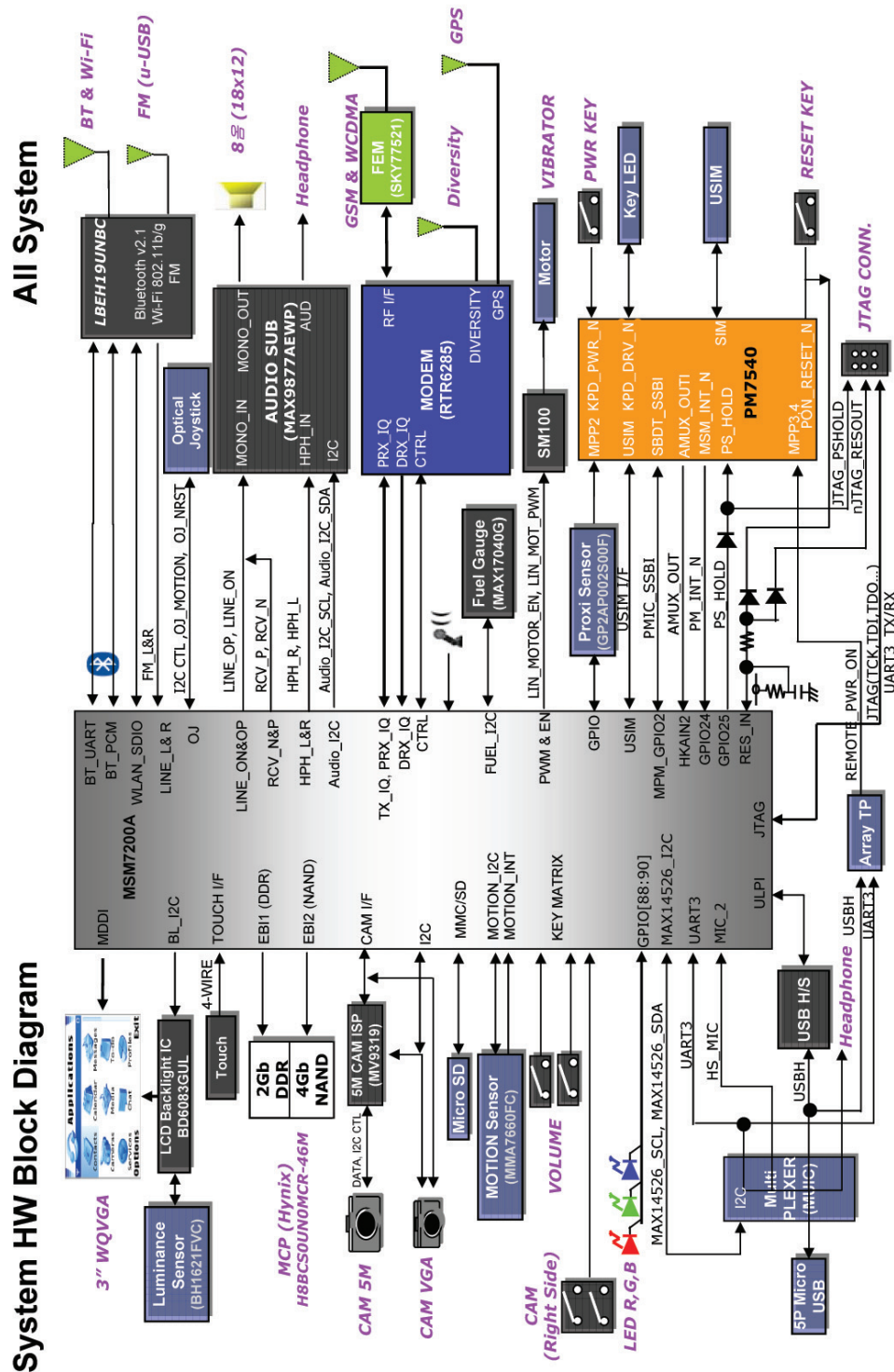


Figure. Simplified Block Diagram of System

3. Technical Brief

3.8.1. Block Diagram(MSM7200A)

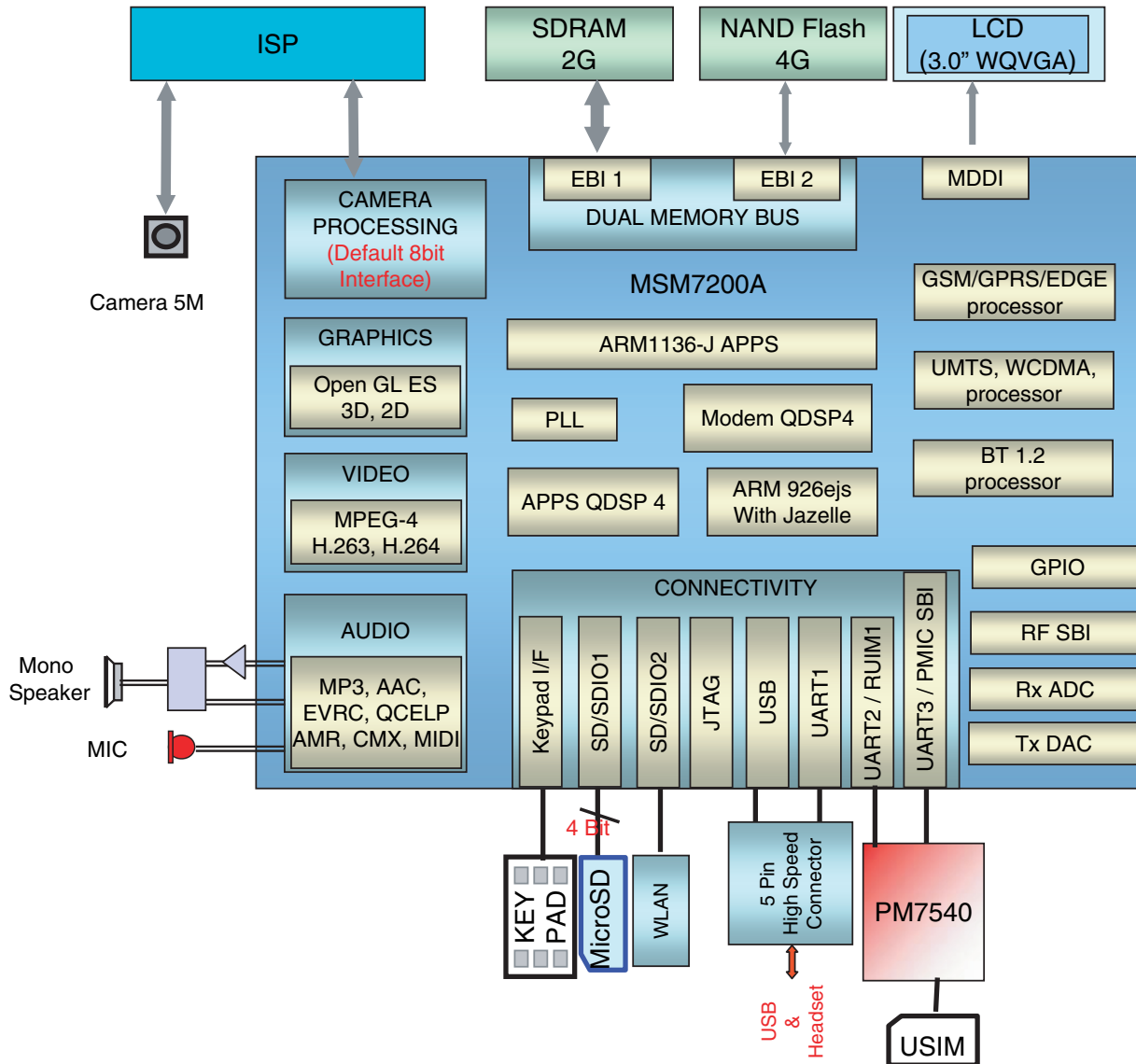


Figure. Simplified Block Diagram of MSM7200A

3.9. Subsystem(MSM7200A)

3.9.1. ARM Microprocessor Subsystem

The MSM7200A device uses an embedded ARM1136-J, ARM926EJ-S microprocessor. This microprocessor, through the system software, controls most of the functionality for the MSM, including control of the external peripherals such as the keypad, LCD, SDRAM, and NAND-Flash devices. Through a QUALCOMM proprietary serial bus interface (SBI) the ARM926EJ-S configures and controls the functionality of the RTR6285 and PM7540 devices.

3.9.2. UMTS Subsystem

The UMTS Subsystem performs the digital UMTS signal processing. Its components include:

- Searcher engine
- Demodulating fingers
- Combining block
- Frame de-interleaver
- Viterbi decoder
- Up-link subsystem
- Turbo decoder

On the down-link channel the UMTS subsystem searches, demodulates, and decodes incoming CPICH, CCPCH, SCH, and Traffic Channel information. It extracts packet data from the downlink traffic channel and prepares the packet data for processing. For the up-link, the WCDMA subsystem processes the packet data and modulates the up-link traffic channel (DCH).

3.9.3. GSM Subsystem

The GSM/GPRS/EGPRS subsystem reuses the MSM6280 GSM core. It performs the digital GSM signal processing and PA gain controls for GPRS support. The PA output level is controlled by an analog signal generated on the MSM. In GSM mode, the power profile ramps up before the burst and ramps down after the burst. In GPRS mode, at the beginning of each burst (up to four active transmit slots), PA must be smoothly ramped up to some desired output power level, held at that level for the current slot, smoothly ramped down/up during the transition period and held to the new level for the next slot until the last slot. Then it must be smoothly ramped down to near-zero level. The MSM6275 support differential GSM PA power control output.

The RF interface communicates with the mobile station external RF circuits. Signals to these circuits control signal gain in the Rx and Tx signal path, control DC offset errors, and maintain the system frequency reference.

3.9.4. RF Interface

The RF interface communicates with the mobile station's external RF and analog baseband circuits. Signals to these circuits control signal gain in the Rx and Tx signal path and maintain The system's frequency reference.

3. Technical Brief

3.9.5. Serial Bus Interface(SBI)

The MSM7200A device's SBI is designed specifically to be a quick, low pin count control protocol for QUALCOMM's RTR6285 and PM7540 ASICs. Using the SBI, the RTR6285 and PM7540 devices can be configured for different operating modes and for minimum power consumption, extending battery life in Standby mode. The SBI also controls DC baseband offset errors.

3.9.6. Wideband CODEC

The MSM7200A device integrates a wideband voice/audio CODEC into the mobile station modem (MSM). The CODEC supports two differential microphone inputs, one differential earphone output, one single-ended earphone output, and a differential analog auxiliary interface.

The CODEC integrates the microphone and earphone amplifiers into the MSM6280 device, reducing the external component count to just a few passive components.

The microphone (Tx) audio path consists of a two-stage amplifier with the gain of the second stage set externally. The Rx/Tx paths are designed to meet the ITU-G.712 requirements for digital transmission systems.

3.9.7. Vocoder Subsystem

The MSM7200A device's QDSP4000 supports AMR,FR,EFR and HR. In addition, the QDSP4000 has modules to support the following audio functions: DTMF tone generation, DTMF tone detection, Tx/Rx volume controls, Tx/Rx automatic gain control (AGC), Rx Automatic Volume Control (AVC), EarSeal Echo Canceller (ESEC), Acoustic Echo Canceller (AEC), Noise Suppression (NS), and programmable, 13-tap, Type-I, FIR, Tx/Rx compensation filters. The MSM7200A device's integrated ARM9TDMI processor downloads the firmware into the QDSP4000 and configures QDSP4000 to support the desired functionality.

3.9.8. ARM Microprocessor subsystem

The MSM7200A device uses an embedded ARM1136-J, ARM926EJ-S microprocessor. This microprocessor, through the system software, controls most of the functionality for the MSM device, including control of the external peripherals such as the keypad, LCD, RAM, ROM, and EEPROM devices. Through a generic serial bus interface (SBI) the ARM926EJ-S configures and controls the functionality of the RTR6285 and PM7540 devices.

3.9.9. Mode Select and JTAG Interfaces

The mode pins to the MSM7200A device determine the overall operating mode of the ASIC. The options under the control of the mode inputs are Native mode, which is the normal subscriber unit operation, ETM mode, which enables the built-in trace mode, and test mode for factory testing. The MSM7200 device meets the intent of the ANSI/IEEE 1149.1A-1993 feature list. The JTAG interface can be used to test digital interconnects between devices within the mobile station during manufacture.

3.9.10. General-Purpose Input/Output Interface

The MSM7200A device has general-purpose bidirectional input/output pins. Some of the GPIO pins have alternate functions supported on them. The alternate functions include USB interface, additional RAM, ROM, general-purpose chip selects, parallel LCD interface, and a UART interface. The function of these pins is documented in the various software releases.

3.9.11. UART

The MSM7200A device employs three UARTs. UART1 has dedicated pins while UART2 and UART3 share multiplexed pins.

- UART1 for Bluetooth
- UART2 for USIM interface
- UART3 for data

3.9.12. USB

The MSM7200A device integrates a universal serial bus (USB) controller that supports both unidirectional and bidirectional transceiver interfaces. The USB controller acts as a USB peripheral communicating with the USB host.

3. Technical Brief

3.10. Power Block

3.10.1. General

MSM7200A, included RF, is fully covered by PM7540(Qualcomm PMIC). PM7540 cover the power of MSM7200A, MSM memory, RF block, Bluetooth, USIM and TCXO.

Major power components are :

PM7540(U403) : Phone power supply

BD6083GUL(Sub-pcb:U502) : LCD Backlight charge pump

3.10.2 PM7540

The PM7540 device (Figure) integrates all wireless handset power management. The power management portion accepts power from all the most common sources – battery, external charger, adapter, coin cell back-up – and generates all the regulated voltages needed to power the appropriate handset electronics. It monitors and controls the power sources, detecting which sources are applied, verifying that they are within acceptable operational limits, and coordinates battery and coin cell recharging while maintaining the handset electronics supply voltages. Eight programmable output voltages are generated using low dropout voltage regulators, all derived from a common trimmed voltage reference. A dedicated controller manages the TCXO warm-up and signal buffering, and key parameters (under-voltage lockout and crystal oscillator signal presence) are monitored to protect against detrimental conditions.

MSM device controls and statuses the PM7540 IC using Single Serial Bus Interface (SSBI) supplemented by an Interrupt Manager for time-critical information. Another dedicated IC Interface circuit monitors multiple trigger events and controls the power-on sequence.

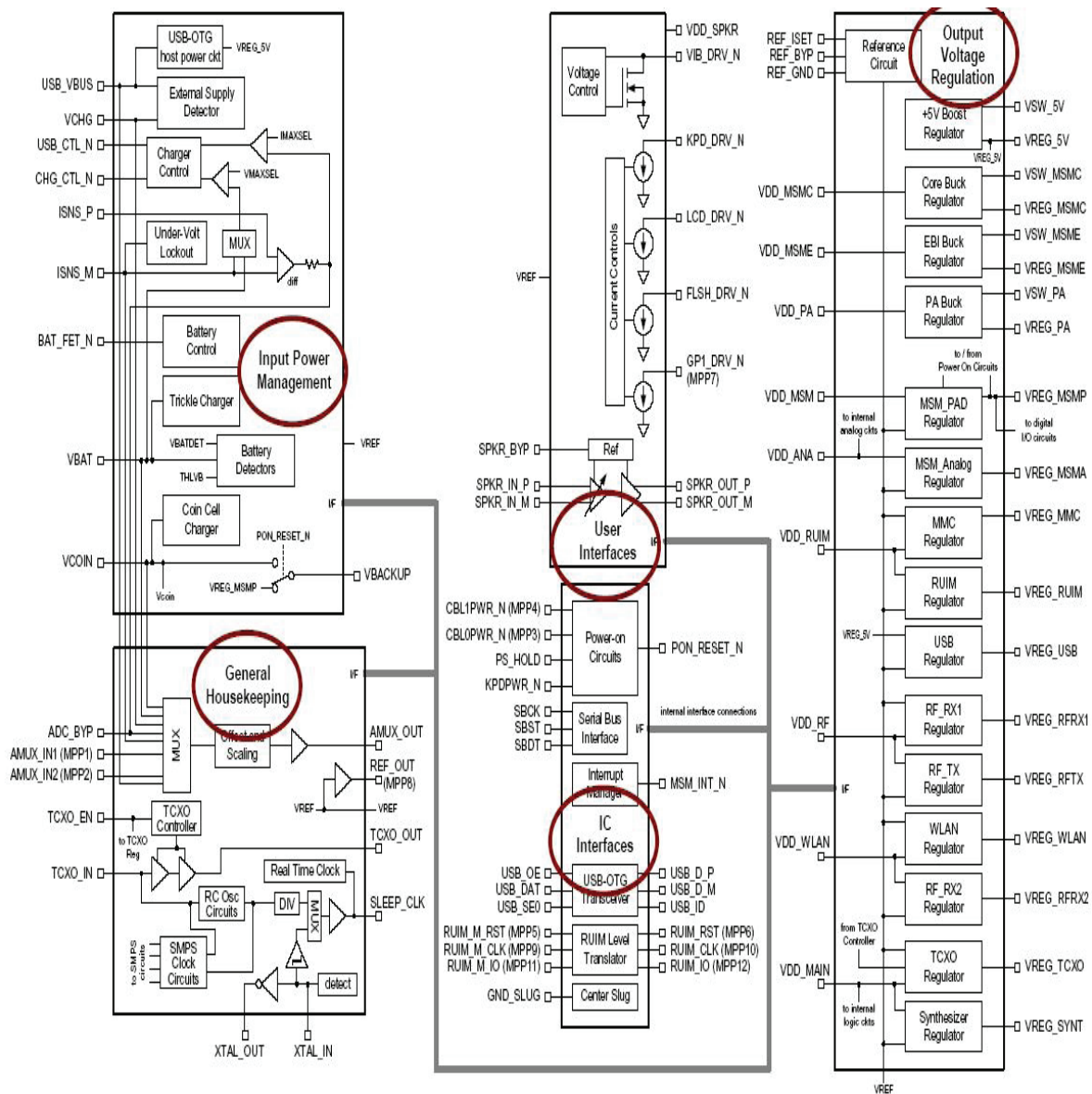
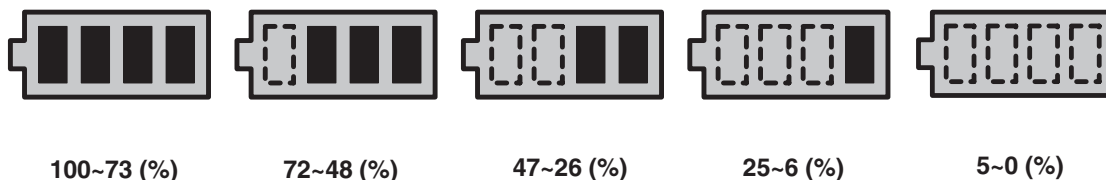
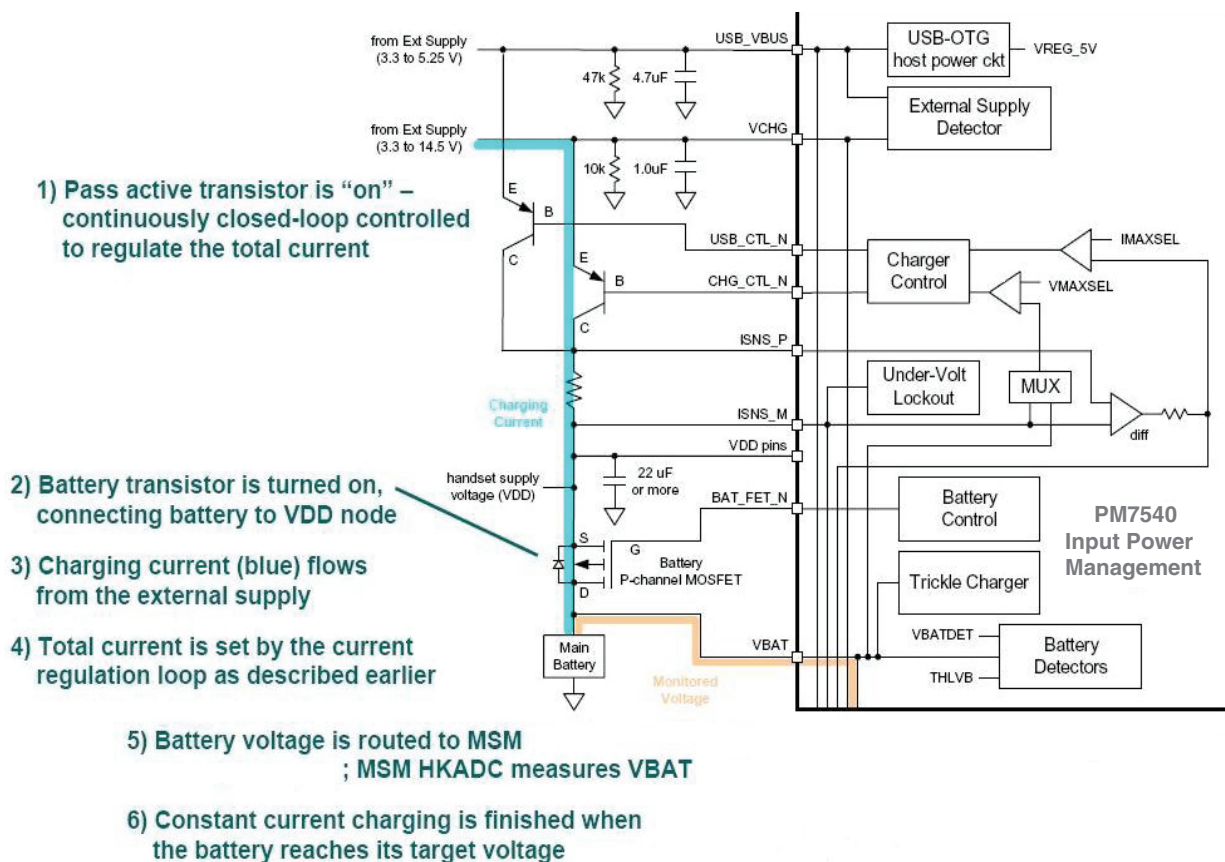


Figure. PM7540 Functional Block Diagram

3. Technical Brief

3.10.3. Charging control

A programmable charging block in PM7540 is used for battery charging. It is possible to set limits for the charging current. The external supply typically connects directly to pin (VCHG). The voltage on this pin (VCHG) is monitored by detection circuitry to ascertain whether a valid external supply is applied or not. For additional accuracy or to capture variations over time, this voltage is routed internally to the housekeeping ADC via the analog multiplexer. PM7540 circuits monitor voltages at VCHARGER and ICHARGE pins to determine which supply should be used and when to switch between the two supplies. These pins are connected to the Source (or emitter) and Drain (or collector) contacts of the pass transistor respectively.

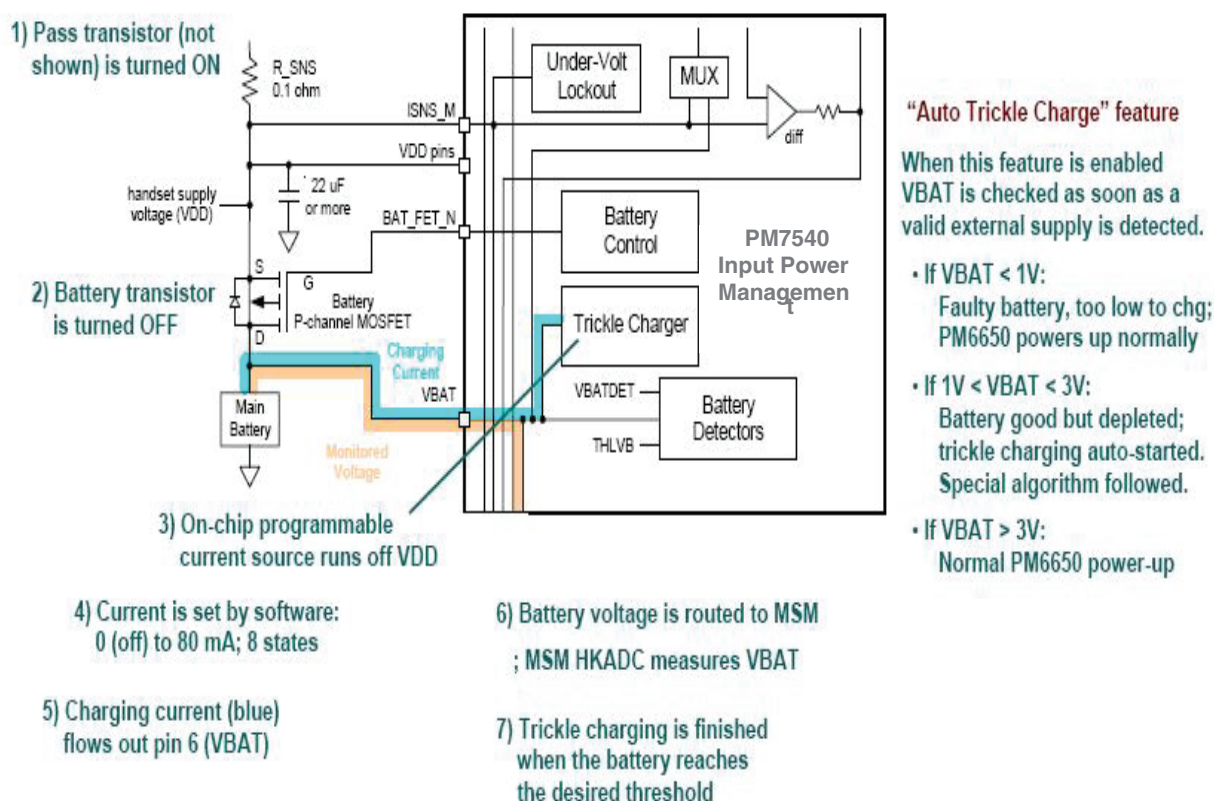


GM750 Battery Bar Display (Stand By Condition)

Trickle Charging

Trickle Charging of the main battery, enabled through SBI control and powered from V_{DD} , is provided by the PM7540 IC. The trickle charger is on-chip programmable current source that supplies current from V_{DD} to pin (VBAT). Trickle charging can be used for lithium-ion and nickel-based batteries, with its performance specified below (3.2V). The charging current is set to 80mA.

Parameter	Min	Typ	Max	Unit
Trickle Current	60	80	100	mA



3. Technical Brief

Constant Current Charging

The PM7540 IC supports constant current charging of the main battery by controlling the charger pass transistor and the battery transistor. The constant current charging continues until the battery reaches its target voltage, 4.2V.

Constant Voltage Charging

Constant voltage charging begins when the battery voltage reaches a target voltage, 4.2V. The end of constant voltage charging is commonly detected 10% of the full charging current.

- Charging Method : CC & CV (Constant Current & Constant Voltage)
- Maximum Charging Voltage : 4.2V
- Maximum Charging Current : 900mA
- Nominal Battery Capacity : 1500mAh
- Charging time : Max 2.5h (Except time trickle charging)
- Full charge indication current (icon stop current) : 120mA
- Cut-off voltage : 3.20V

3.11. External memory interface

A. MSM7200A

The MSM7200A device was designed to provide two distinct memory interfaces. EBI1 was targeted for supporting DDR synchronous memory devices. EBI2 was targeted towards supporting slower asynchronous devices such as LCD, NAND flash, SRAM, NOR flash etc. To support the high-bandwidth, high-density, and low-latency requirements of the advanced on-chip applications, the MSM7200A IC has two high-speed, high-performance memory slave interfaces: the external bus interface 1 (EBI1) and the stack memory interface (SMI). To achieve higher bandwidth and better use of the memory device interface, the SMI accepts multiple commands for the external memory device. The SMI interface acts as a slave device to all of the bus masters within the MSM device. The masters arbitrate to gain access to the SMI, and upon obtaining the access, they issue commands to the SMI. The bus masters are connected to the SMI through an advanced extensible interface (AXI) bus bridge (or global interconnect block) and communicate over a 64-bit, non-blocking AXI bus protocol. The AXI bus bridge provides the arbitration logic for all of the bus masters.

- EBI1 Features
 - Support for only low-power memories at 1.8-V I/O power supply voltage
 - AXI bus frequencies up to 133 MHz
 - A 16-bit/32-bit static and dynamic memory interface
- DDR SDRAM interface features include:
 - Supports both 32-bit DDR SDRAM devices, up to 133-MHz bus speed
 - Supports auto pre-charge and manual pre-charge
 - Supports partial refresh
 - Separate CKE pin per chip-select to support partial operation mode
 - Idle power down to save idling power consumption
- EBI2 Features
 - Support for asynchronous FLASH and SRAM(16bit & 8bit).
 - Interface support for byte addressable 16bit devices(UB_N & LB_N signals).
 - 2Mbytes of memory per chip select.
 - Support for 8 bit/16bit wide NAND flash.
 - Support for parallel LCD interfaces, port mapped of memory mapped(8 or 16 bit)
- Multi Chip Package : DDR SDRAM and NAND Flash merged 1 package
- 2Gbit Mobile DDR SDRAM(64Mb x32) / 4Gbit NAND Flash

Interface Spec				
Part Name	Product Gr	Maker	Operation Voltage (Flash / DRAM)	Speed (Flash / DRAM)
H8BCS0UN0MCR -46M	NAND	Hynix	1.8V	45ns / 333MHz
	SDRAM		1.8V	

Table#1. External memory interface for GM750

3. Technical Brief

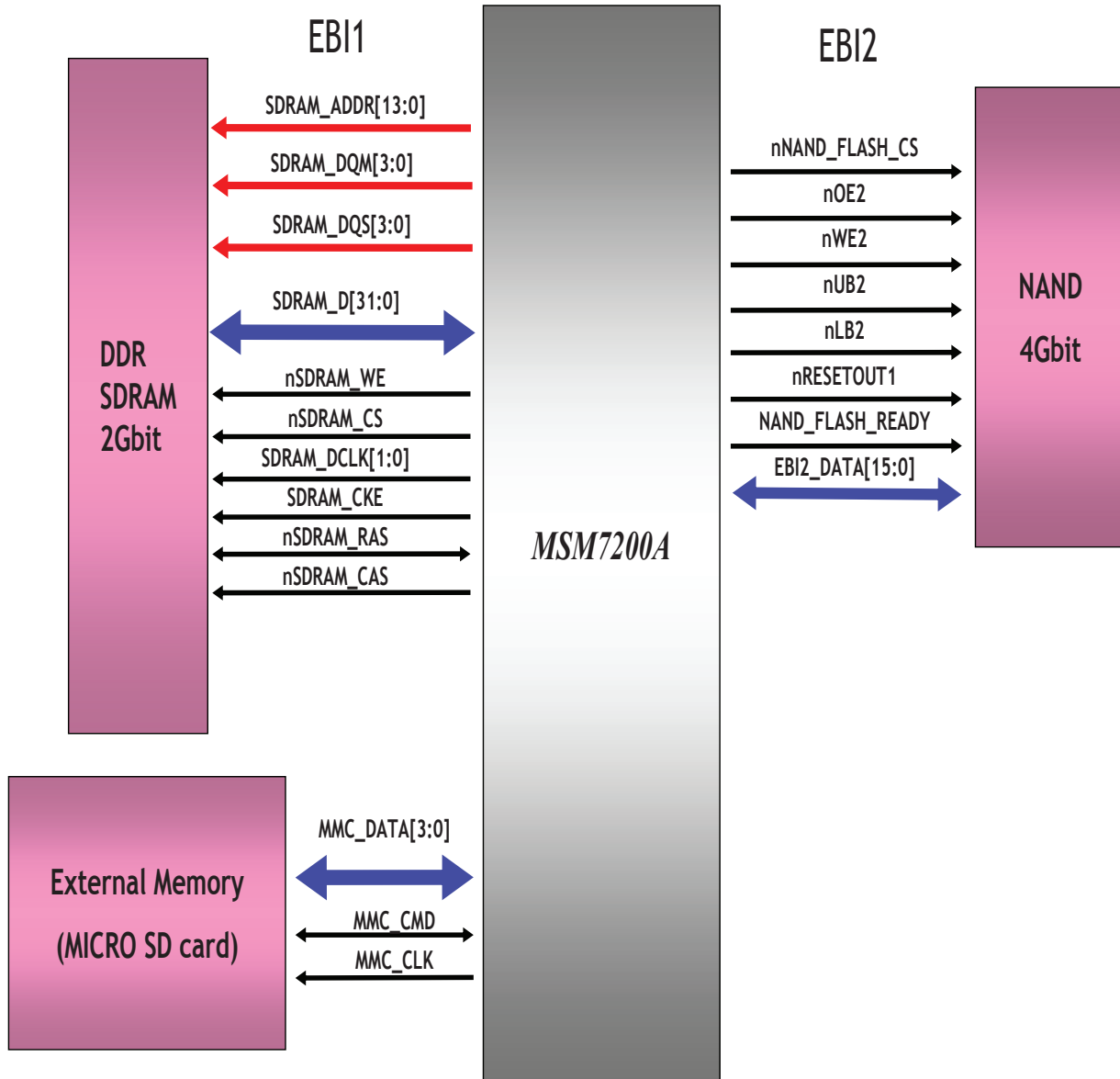


Figure. Simplified Block Diagram of Memory Interface

3.12. H/W Sub System

3.12.1. RF Interface

A. RTR6285 (WCDMA_Tx, GSM_Tx/Rx)

MSM7200A controls RF part(RTR6285) using these signals.

- SSBDT : SSBI I/F signals for control Sub-chipset
- TX_ON : Power AMP on RF part
- RX0_I/Q_M/P, TX_I/Q_M/P : I/Q for T/Rx of RF
- TX_AGC_ADJ : control the gain of the Tx signal prior to the power amplifier
- DAC_REF : Reference input to the MSM Tx data DACs

B. the others

- TRK_LO_ADJ : TCXO(19.2M) Control
- PA_ON0/PA_RANGE0 : WCDMA(2100) TX Power Amp Enable
- ANT_SEL[0-3] : Ant Switch Module Mode Selection(WCDMA,GSM Tx/Rx,DCS-PCS Tx/Rx)
- GSM_PA_RAMP : Power Amp Gain Control of APC_IC

3. Technical Brief

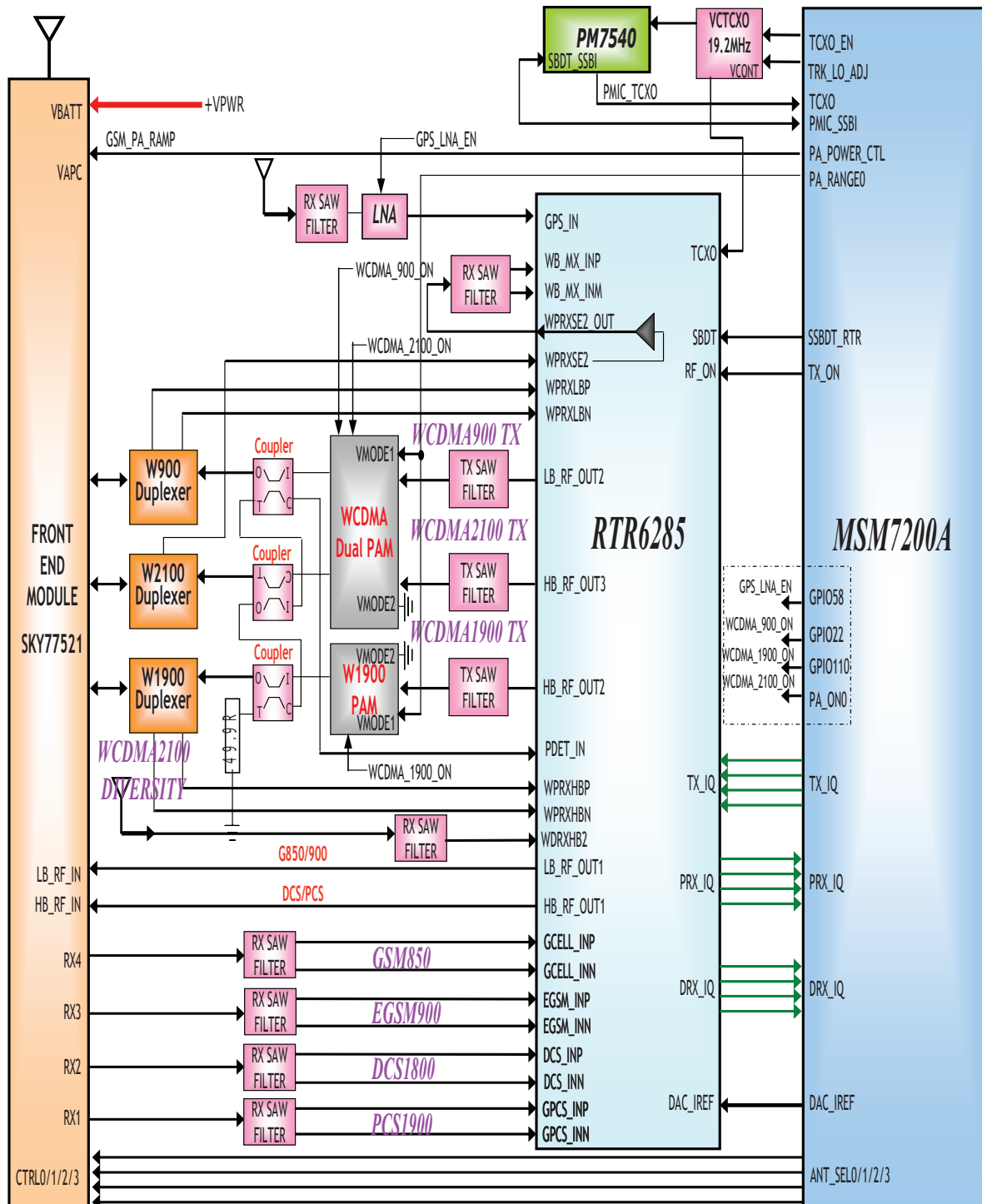


Figure. Block Diagram of RF Interface

3.12.2. MSM Sub System

3.12.2.1. USIM Interface

SIM interface scheme is shown in Figure.
And, there control signals are followed

- USIM_CLK : USIM Clock
- USIM_Reset : USIM Reset
- USIM_Data : USIM Data T/Rx

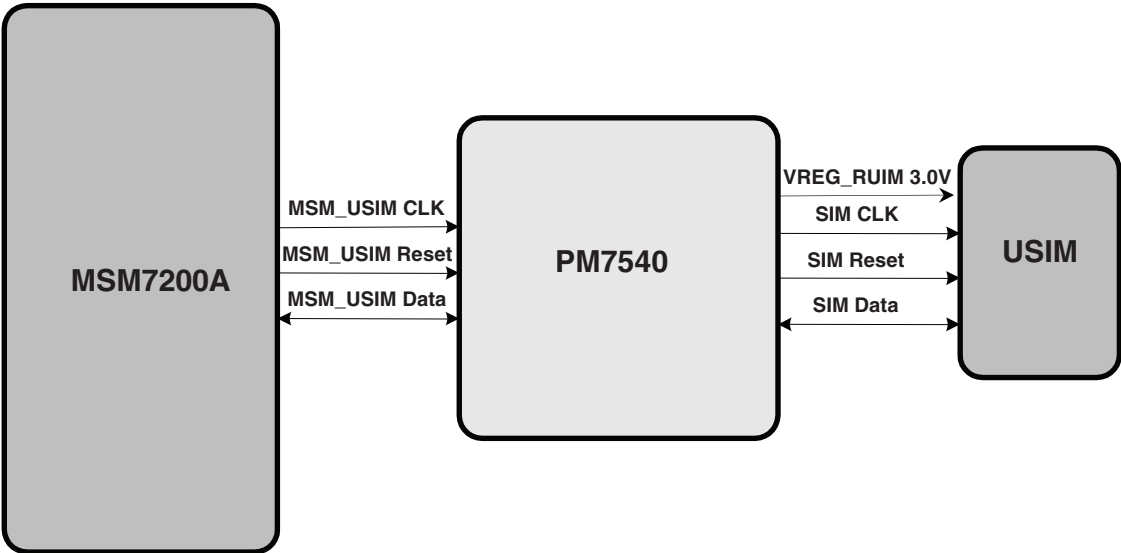


Figure. SIM Interface

3.12.2.2. UART Interface

UART signals are connected to MSM GPIO through IO connector with 115200 bps speed.

GPIO_Map	Name	Note
GPIO_86	UART3_RX	Data_Rx
GPIO_87	UART3_TX	Data_Tx

Table. UART Interface

3. Technical Brief

3.12.2.3. HS-USB

The universal serial bus (USB) is an interconnection standard widely supported by the electronic industry. The USB2.0 spec defines data rates as low-speed (1.5 Mbps), full-speed (12Mbps) and hi-speed (480 Mbps). When two devices are connected via a USB interface, one of the devices must act as a host, and the other device must act as a peripheral. The host is responsible for initiating and controlling traffic on the bus. The USB specification requires personal computers (PCs) to act as hosts, and other devices such as printers, keyboards, mice, etc. to act as peripherals. The OTG supplement creates a new class of devices called OTG devices. OTG devices can act as either hosts or peripherals, depending upon how they are connected and/or used.

The MSM7200A device contains a new USB high-speed function that is based on an embedded UTMI+ core with a UTMI+ low pin interface (ULPI) compatible port. The MSM device's ULPI interface connects to an external ULPI PHY chip to complete the design. The ULPI core embedded in the MSM along with the PM7540 IC and a USB high-speed PHY IC provide support for the high-speed interface.

Name	Note
USBH_CLK	Input clock from PHY
USBH_DIR	Controls the direction of USBH_DATA. When high, data is driven into the MSM.
USBH_NEXT	Used by the PHY to throttle data.
USBH_STOP	Signals the end of a USB transmit packet or a register write operation, and optionally stops any receive.
USBH_DATA[0:7]	Bi-directional data pin

Table. HSUSB Signal Interface

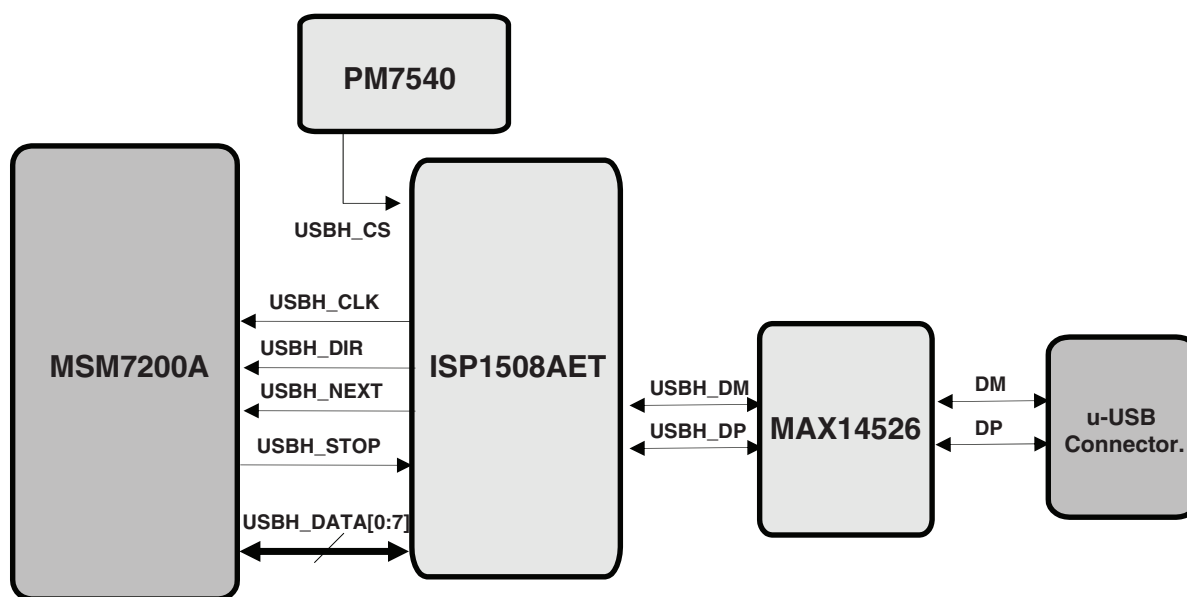


Figure. USB block (MSM7200A Side & ISP1508AET, MAX14526 Side)

3.12.3. Key Pad

There are 6 main key buttons that are controlled by MSM7200A. Refer to the Keypad circuit.
'Power Button' Key is connected to PMIC(PM7540:KPD_PWR_N).

	KEY_COL[0]	KEY_COL[1]	OJ_NRST
KEY_ROW[0]	Multitasking	VOL_DOWN	Optical Joystick
KEY_ROW[1]	FOCUS	VOL_UP	
KEY_ROW[2]	CAMERA	-	

Table. Key Matrix Mapping Table

POWER ON/OFF KEY

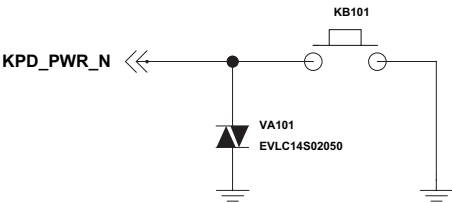


Figure. Power ON / OFF & Suspend Button Keypad circuit

3. Technical Brief

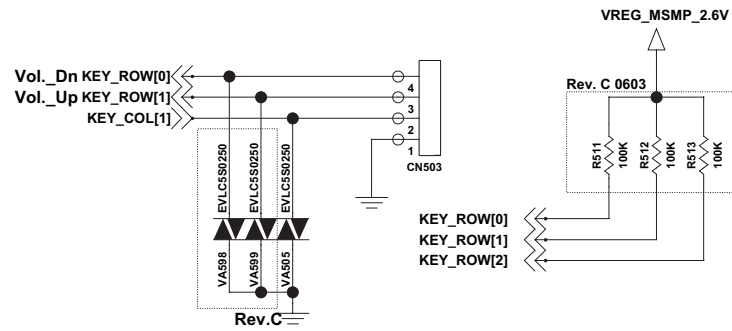


Figure. Volume Keypad Circuit

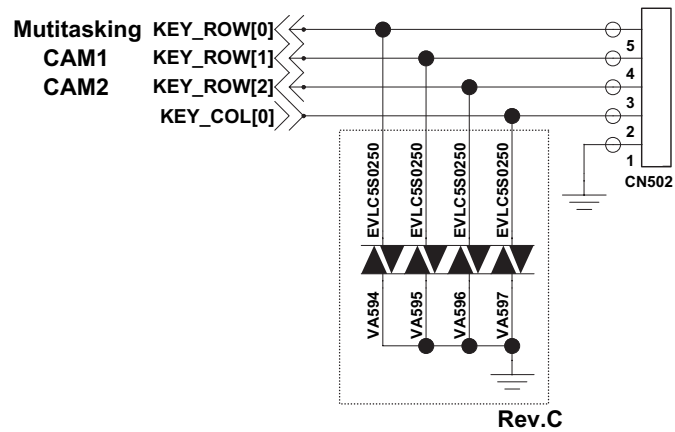


Figure. Camera & Multitasking Keypad Circuit

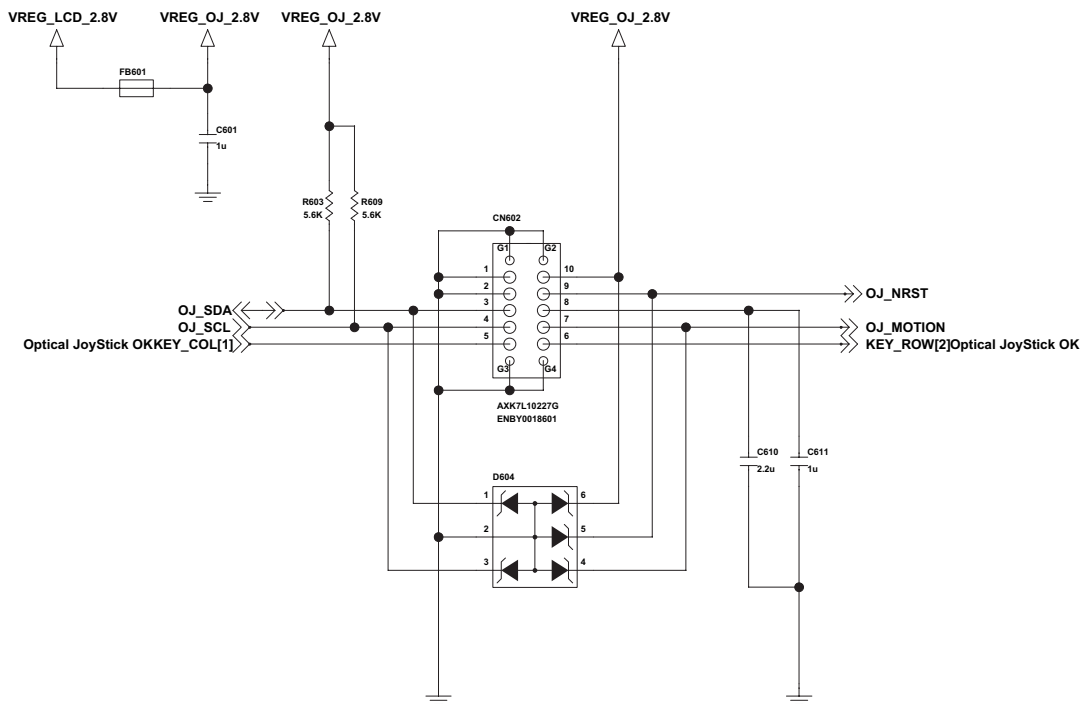


Figure. Optical Joystick Keypad Circuit

3. Technical Brief

3.12.4. Touch Interface

In GM750, 4-wire touch screen panel is used for user input method.

Two resistive layers make up a 4-wire touch screen panel and are separated by insulating dots. The inside surface of each layer is coated with a transparent metal oxide coating that generates a gradient across each layer when voltage is applied.

Signal name	Pin number	Description		Pad type		Voltage
		4-wire	5-wire	4-wire	5-wire	
TS_LR	D1	Ym	LR	I/O	O	Analog
TS_LL	D2	Xm	LL	I/O	O	Analog
TS_UR	E1	Yp	UR	I/O	O	Analog
TS_UL	E2	Xp	UL	I/O	O	Analog
WIPER	C1	Unused	Wiper	Unused	I	Analog

Table. MSM7200A Touch screen connections

Parameter	Min	Nom	Max	Unit
Supply voltage V_{DD}	2.5	2.6	2.7	V
Ambient operating temperature T_a	-40	25	95	°C
Touch screen panel resistance	200		1000	Ω
Touch screen panel capacitance	0.1		10	nF

Table. Recommended operation conditions

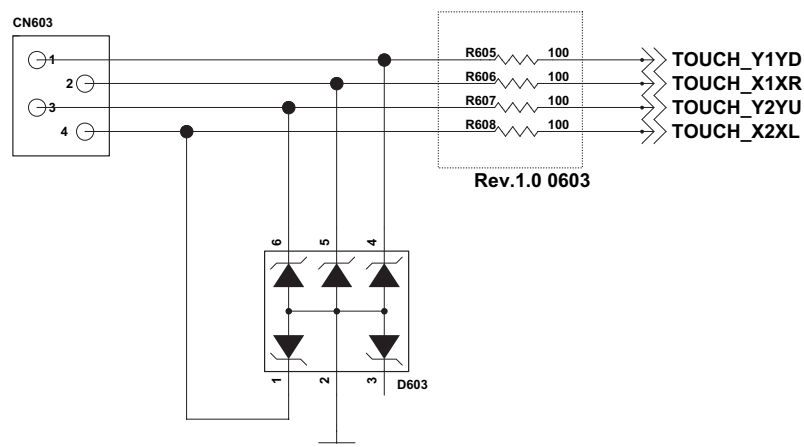


Figure. Touch screen circuit

3.12.5. LED(KEY/Indicator) Light

There are 2 White LEDs in sub key backlight circuit, which are driven by KPD_DR_N line from PM7540.

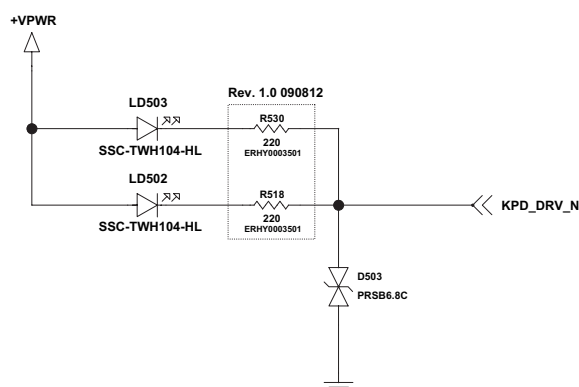


Figure. Schematic of Power Keypad back light circuit

In addition, there is 1 RGB LED in LED Notification-RGB backlight circuit, which are driven by KEYB_BACKLIGHT line from MSM7200A GPIO90/89/88.

Notification RGB LED

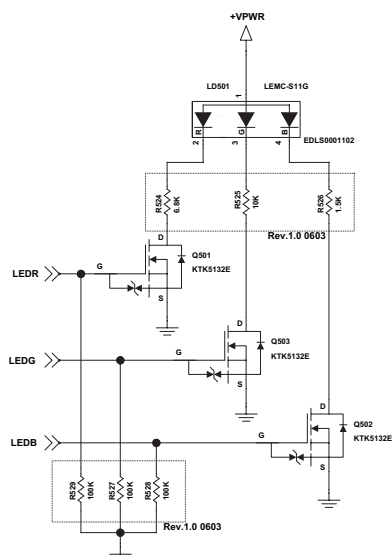


Figure. Schematic of KEY back light circuit

3. Technical Brief

3.13. Audio and sound

3.13.1. Overview of Audio & Sound & BT path

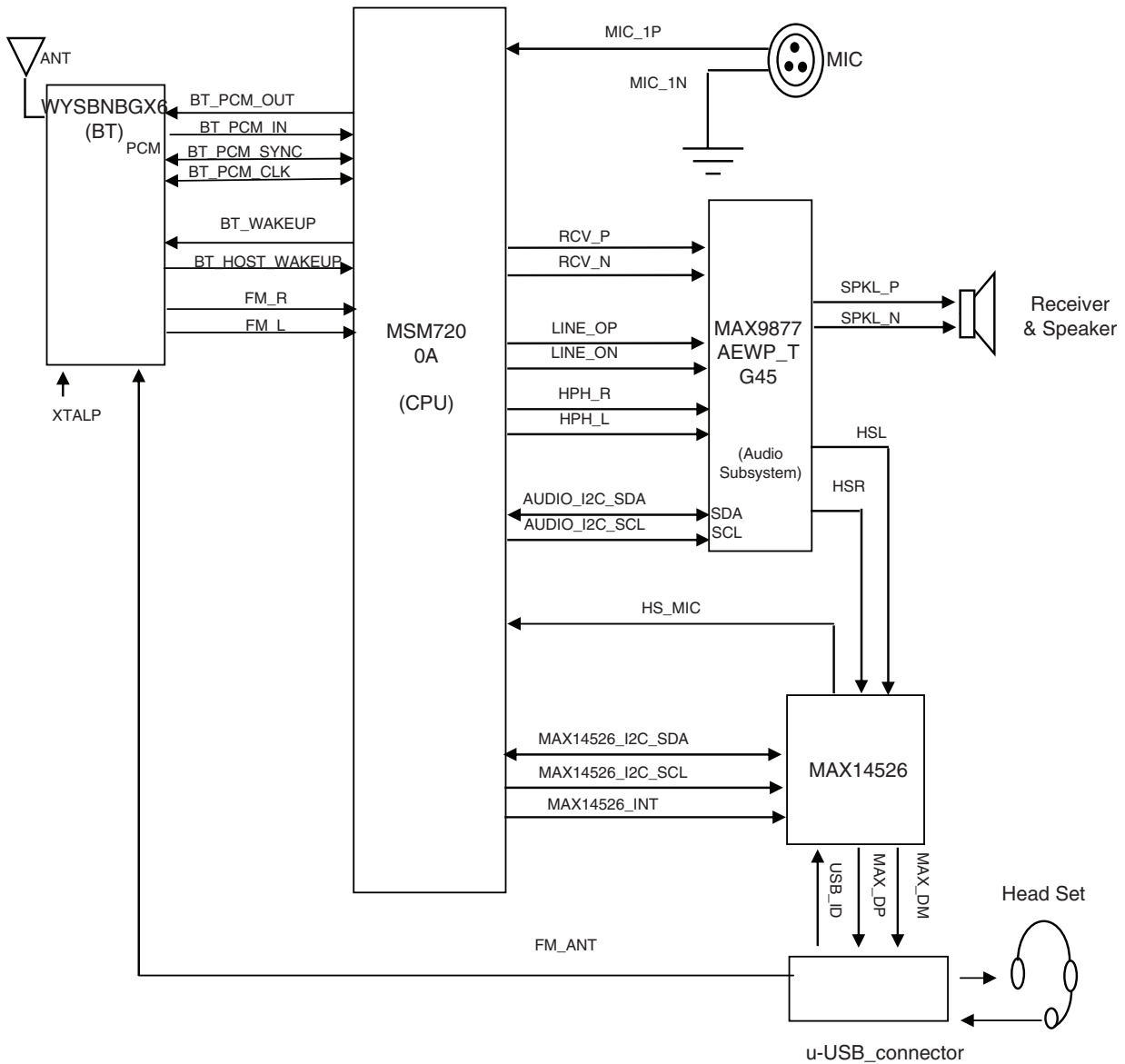


Figure. Block diagram of Audio & Sound path

3.13.2. Audio signal processing & interface

3.13.2.1 MSM7200A audio interface

The MSM7200A audio front end comprises the stereo wideband codec, PCM interface, and additional DSP audio processing.

The stereo wideband codec allows the MSM7200A device to support stereo music/ringer melody applications in addition to the 8 kHz voice band applications on the forward link. In the audio transmit path, the device operates as 13-bit linear converter with software, selectable 8 kHz and 16 kHz sampling rate. In the audio receive path, the device operates as a software-selectable 13-bit or 16-bit linear converter with software selectable 8 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, or 48 kHz sampling rate. Through software, the Rx path can be configured as either a mono or stereo output.

New to the MSM7200A device is a transmit (Tx) ADC path that now supports stereo wideband sampling.

The integrated codec contains all of the required conversion and amplification stages for the audio front end. The codec operates as a 13-bit linear codec with the transmit (Tx) and receive (Rx) filters designed to meet ITU-T G.712 requirements. The codec includes a programmable side tone path for summing a portion of the Tx audio into the Rx path. An on-chip voltage/current reference is provided to generate the precise voltages and currents required by the codec. This circuit requires a single capacitor of 0.1 μ F to be connected between the CCOMP and GND pins. The on-chip voltage reference also provides a microphone bias voltage required for electret condenser microphones typically used in handset applications. The MICBIAS output pin is designed to provide 1.8 V DC while delivering as much as 1 mA of current. Audio decoder summing and headset switch detection are included.

The codec interface includes the amplification stages for both the microphone and earphone. On the transmit (Tx) path, the interface supports two differential microphone inputs, a differential auxiliary input, and a stereo line input. On the receive (Rx) path the interface supports one differential earphone output, a stereo single-ended headphone output, one differential auxiliary output, and stereo single-ended line outputs.

The codec is configured by the codec SBI registers. The codec interface is shown in Figure.

Also part of the audio front end is the PCM interface. The PCM interface allows for an external codec to be used instead of the internal codec. This interface can be used in I2S mode which will allow for an external stereo DAC to be used.

Finally, the audio front end includes additional DSP audio processing that does gains, filtering and other audio processing.

The DSP audio processing is configured through the QDSP5000 command types and is not directly controlled by the microprocessor.

3. Technical Brief

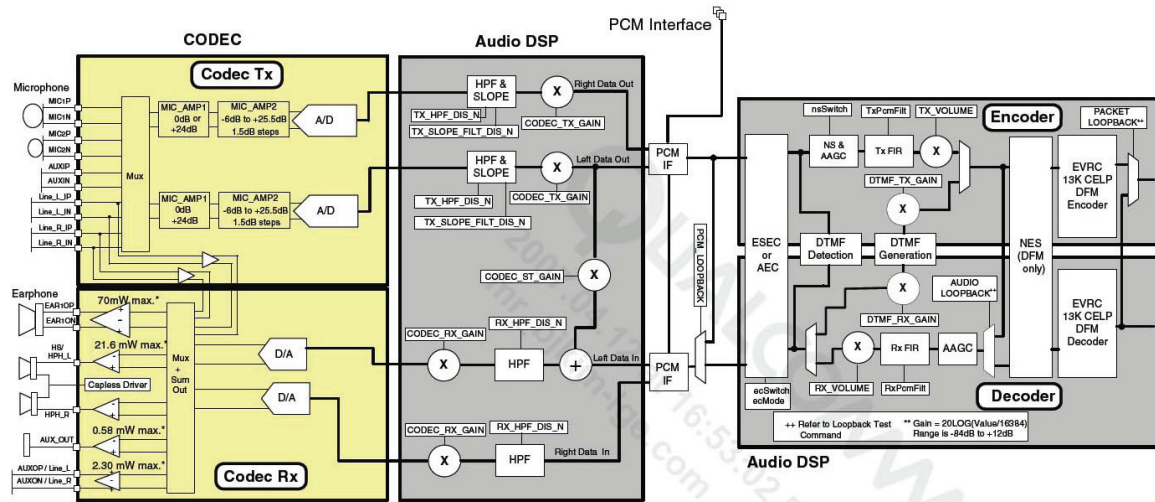


Figure. Detailed diagram of MSM7200A audio interface

3.13.2.2 MAX9877 audio interface

The MAX9877 combines a high-efficiency Class D audio power amplifier with a stereo Class AB capacitorless DirectDrive™ headphone amplifier. Maxim's 3rd generation, filterless Class D amplifier with active emissions limiting technology provides Class AB performance with Class D efficiency. The MAX9877 delivers up to 725mW from a 3.7V supply into an 8Ω load with 87% efficiency to extend battery life. The filterless modulation scheme combined with active emissions limiting circuitry and spread-spectrum modulation greatly reduces EMI while eliminating the need for output filtering used in traditional Class D devices.

The stereo Class AB headphone amplifier in the MAX9877 uses Maxim's patented DirectDrive architecture, that produces a ground-referenced output from a single supply, eliminating the need for large DC-blocking capacitors, saving cost, space and component height. The device utilizes a user-defined input architecture, three preamplifier gain settings, an input mixer, volume control, comprehensive click-and-pop suppression, and I2C control. A bypass mode feature disables the integrated Class D amplifier and utilizes an internal DPST switch to allow an external amplifier to drive the speaker that is connected at the outputs of the MAX9877. The MAX9877 is available in a thermally efficient, space-saving 20-bump WLP package.

3. Technical Brief

Low RF Susceptibility, Mono Audio Subsystem with DirectDrive Headphone Amplifier

Typical Application Circuit

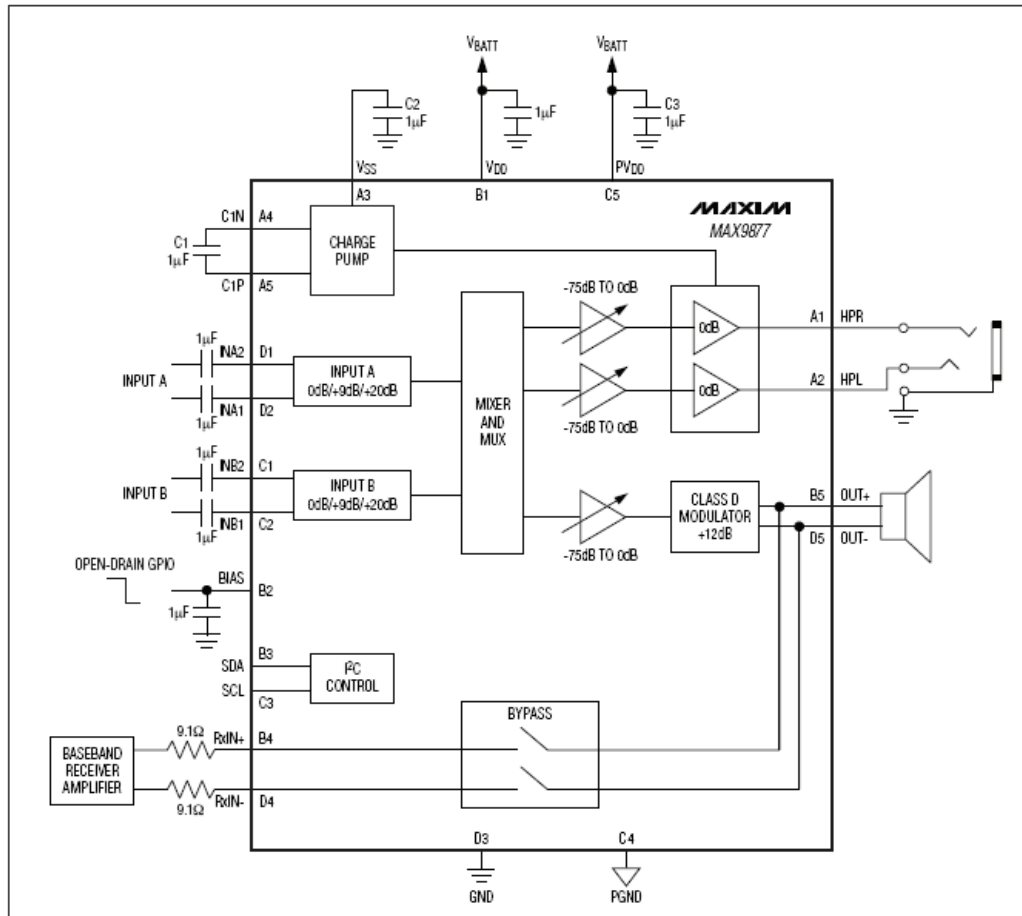
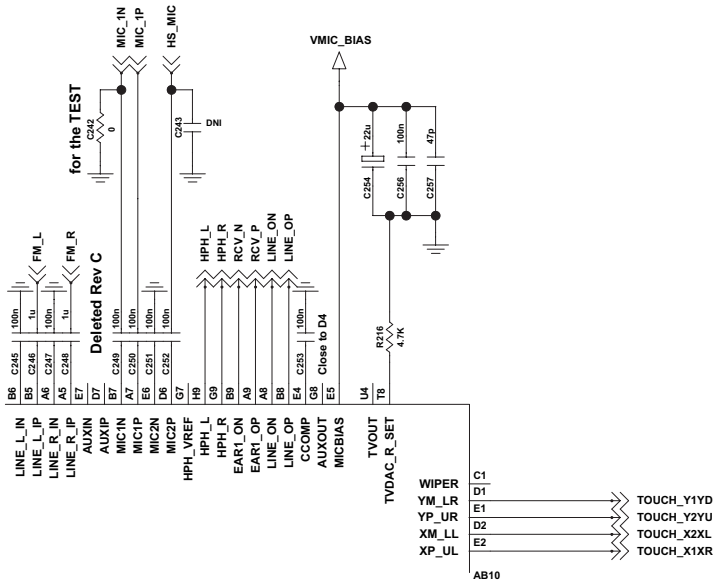
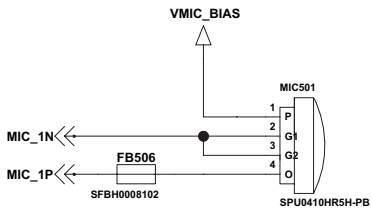


Figure. Detailed diagram of MAX9877 audio interface

MSM7200A Block



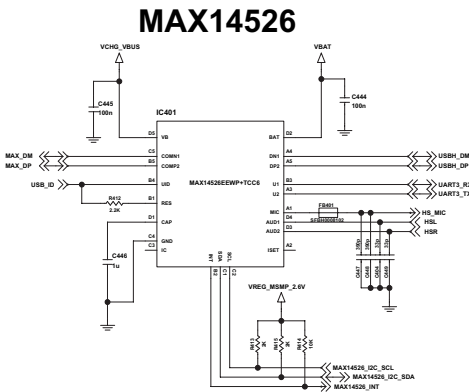
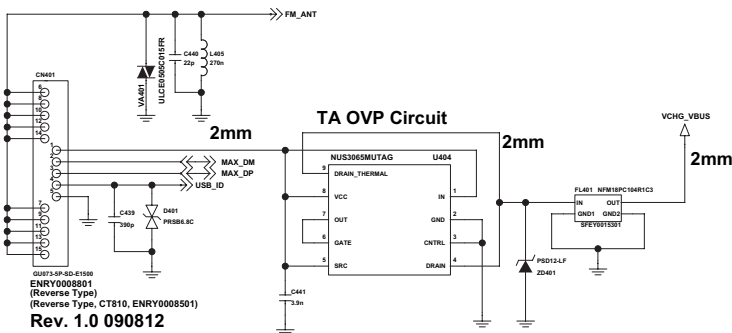
Handset main MIC Block



Deleted Rev. C

Head Set Jack Block

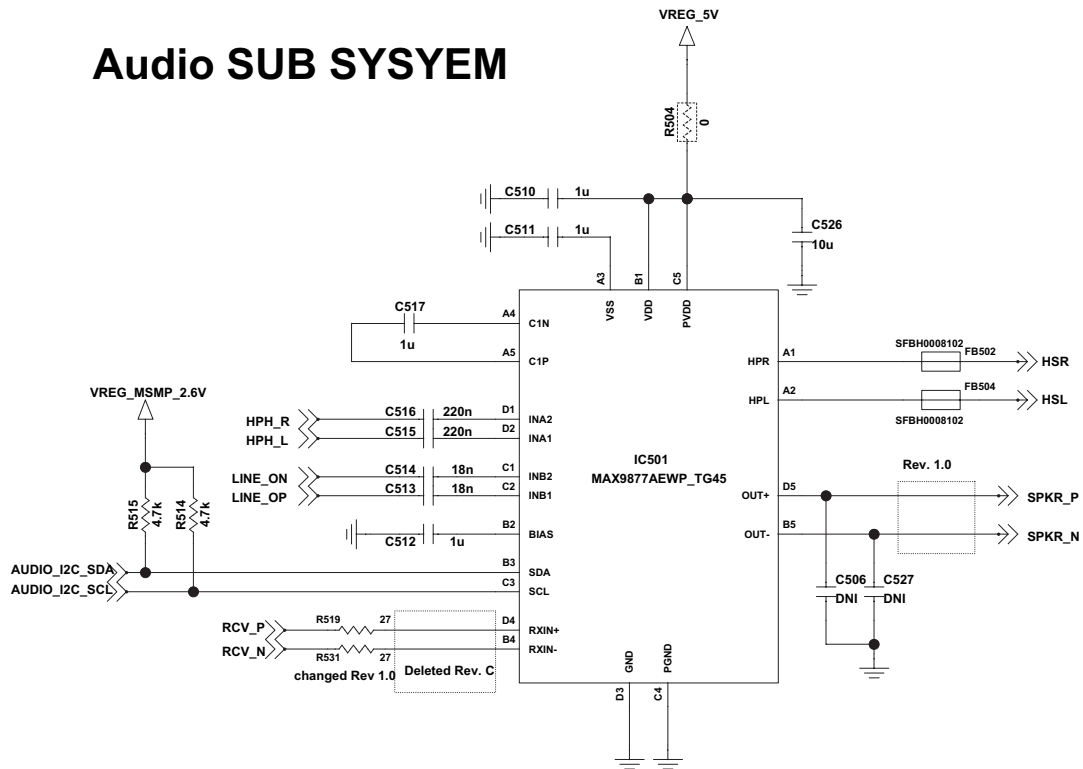
u-USB Connector



3. Technical Brief

Audio Subsystem(LM49150) Block & Analog S/W

Audio SUB SYSEM



3.14 Camera interface

GM730 has two cameras : 5M Pixel CMOS Camera and VGA camera.
Below figures shows the 5M camera I/F and ISP Block.

3.14.1 5 Mega Camera Interface

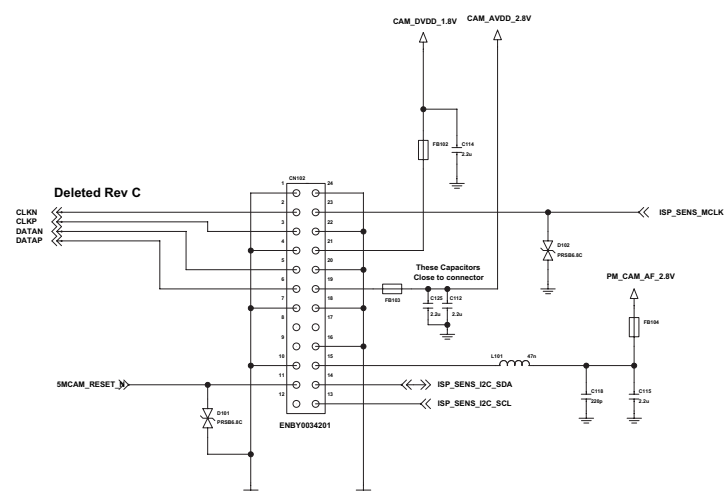


Figure. Schematic of 5 Mega Camera I/F

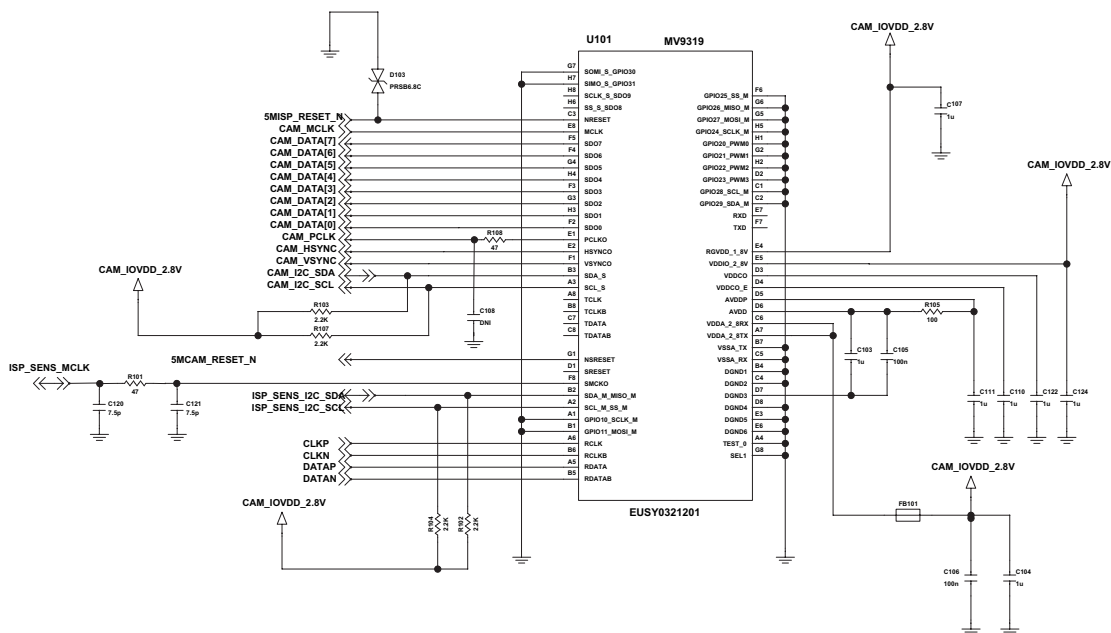


Figure. Schematic of ISP Block

3. Technical Brief

NO	NAME	TYPE	Description
1	GND	Ground	Ground
2	CLKN	Output	Clock line -
3	CLKP	Output	Clock line +
4	GND	Ground	Ground
5	DATAN	Output	Data line -
6	DATAP	Output	Data line +
7	GND	Ground	Ground
8	NC	NC	NC
9	NC	NC	NC
10	GND	Ground	Ground
11	5MCAM_RESET_N	Input	Camera reset (Active "L")
12	NC	NC	NC
13	I2C_SCL	Input	I2C Clock
14	I2C_SDA	Input/Output	I2C Data
15	PM_CAM_AF_2.8V	Power	AF Motor power (2.8V)
16	GND	Ground	Ground
17	NC	NC	NC
18	GND	Ground	Ground
19	CAM_AVDD_2.8V	Power	Analog Power (2.8V)
20	GND	Ground	Ground
21	CAM_DVDD_2.8V	Power	Digital Power (2.8V)
22	GND	Ground	Ground
23	ISP_SENS_MCLK	Input	Master clock input
24	GND	GND	GND

Table. Interface between 5M Camera Module and SUB Board

The 5M Camera module is connected to Sub board with 24pin Board to Board connector (GB042-24S-H10-E3000). Its interface is dedicated camera interface port in MSM7200A via ISP MV9319. The camera port supply 24MHz master clock to ISP and then ISP supply 24MHz master clock to camera module again and receive serial data from camera module. And ISP supply converted 8bits data, 48MHz pixel clock(max.15fps@ full resolution), vertical sync signal, horizontal sync signal, reset signal to MSM7200A again. The camera module is controlled by I2C port from MSM7200A via ISP.

3.14.2 VGA Camera Interface

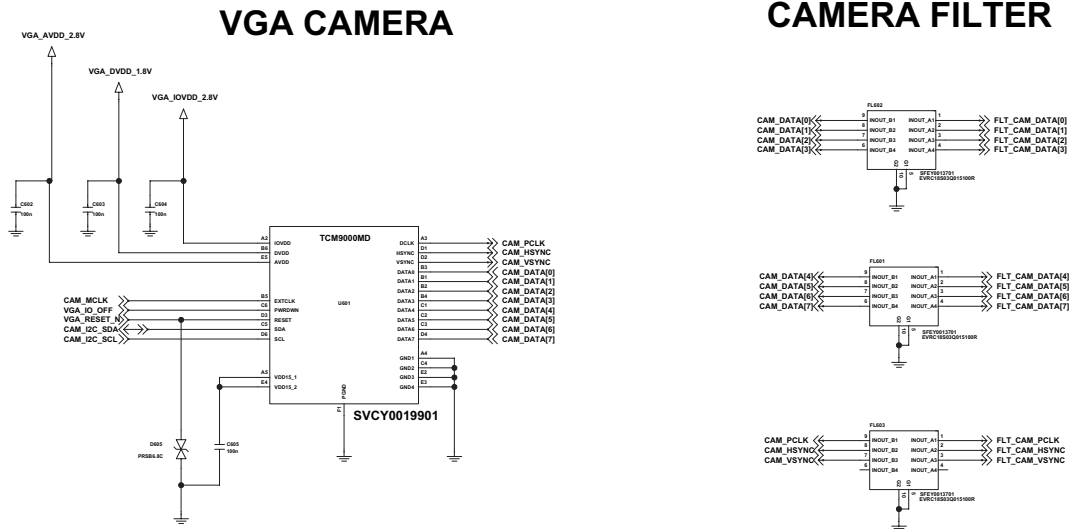


Figure. Schematic of VGA Camera Module and I/F

The VGA Camera module is mounted to Sub board. Its interface is dedicated camera interface port in MSM7200A. The camera port supply 24MHz master clock to camera module and receive 19.2MHz pixel clock (max.30fps@VGA), vertical sync signal, horizontal sync signal, reset signal and 8bits data from camera module. The camera module is controlled by I2C port from MSM7200A.

3. Technical Brief

3.14.3 LCD backlight LED Driver / Auto Luminous Control

U502(in Main PCB) is a Sub PMIC(LCD Backlight LED Driver, Charge pump DCDC and Auto Luminous Control). This part is controlled by I2C of MSM7200A.

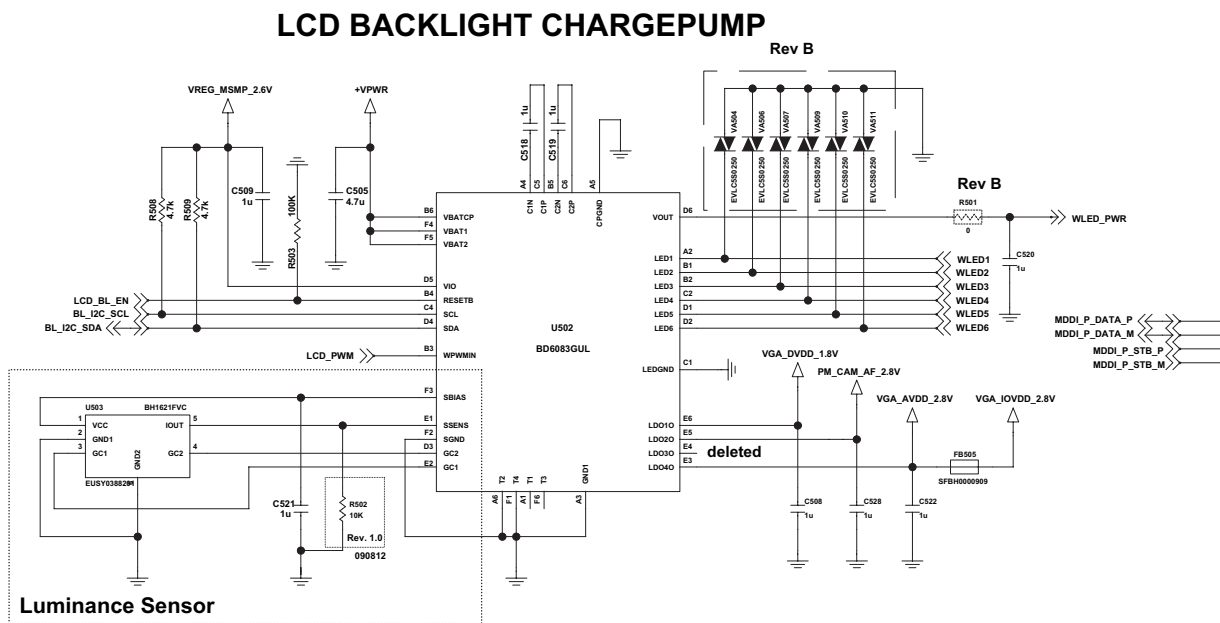


Figure. Schematic of Sub PMIC

3.14.4 LCD module

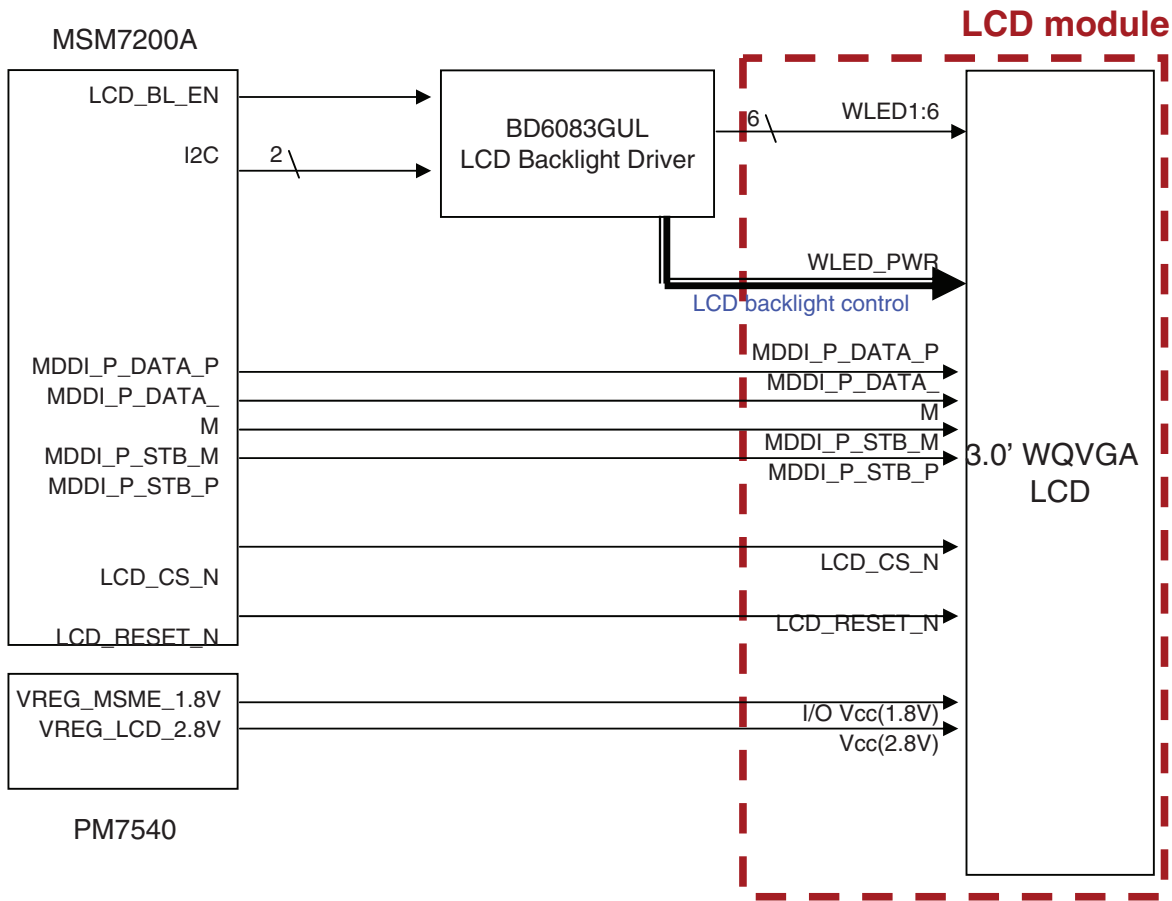


Figure. LCD I/F Block Diagram

3. Technical Brief

3.14.5 Display

LCD module is connected to Main PCB with 24-pin connector(GB042-24S-H10-E3000, CN504). The LCD is controlled by MDDI Interface in MSM7200A.

3" WQVGA LCD CONNECTOR

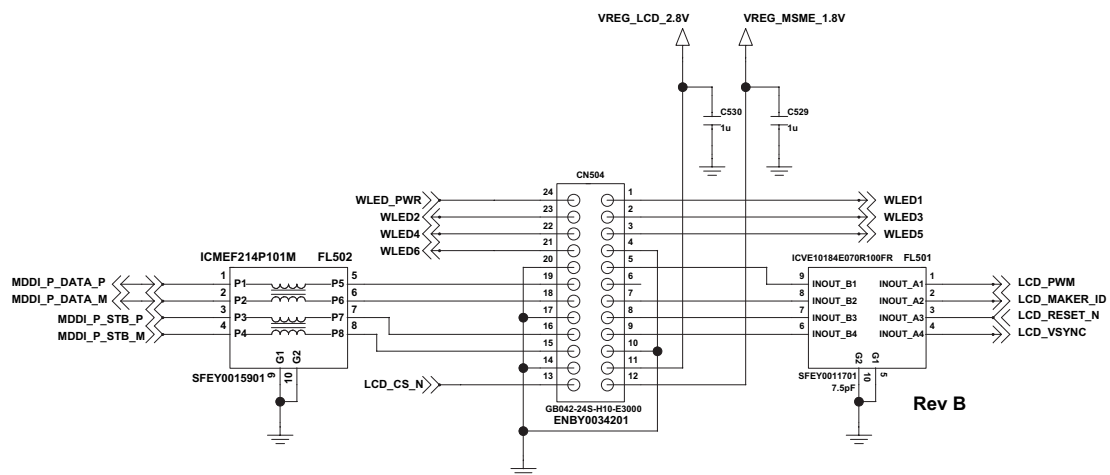


Figure. Schematic of LCD connector (in Main PCB)

NO.	DISCRIPTION	NO.	DISCRIPTION
1	LED(AN)	13	IOVCC
2	LED2(CA)	14	VCC
3	LED4(CA)	15	GND
4	LED6(CA)	16	VSYNC_OUT
5	GND	17	RESET
6	MDDI_DATA_P	18	MAKER_ID(LOW)
7	MDDI_DATA_M	19	OTP(OPEN)
8	GND	20	PWM
9	MDDI_STB_P	21	GND
10	MDDI_STB_M	22	LED5(CA)
11	GND	23	LED3(CA)
12	CS	23	LED1(CA)

Table. Interface between LCD Module and Main Board

3.15 Proximity Sensor

When call connected, the object is moved nearer to the proximity sensor. LCD backlight and Touch screen is disable operation automatically.

U501 : GP2AP002S00F With the Control IC)

Figure. Proximity Sensor Schematic

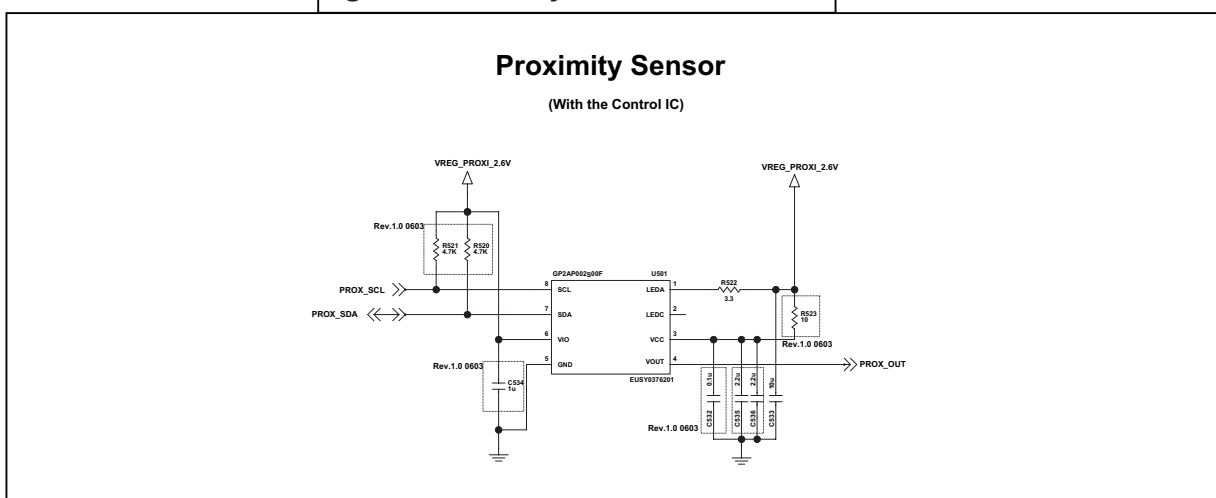
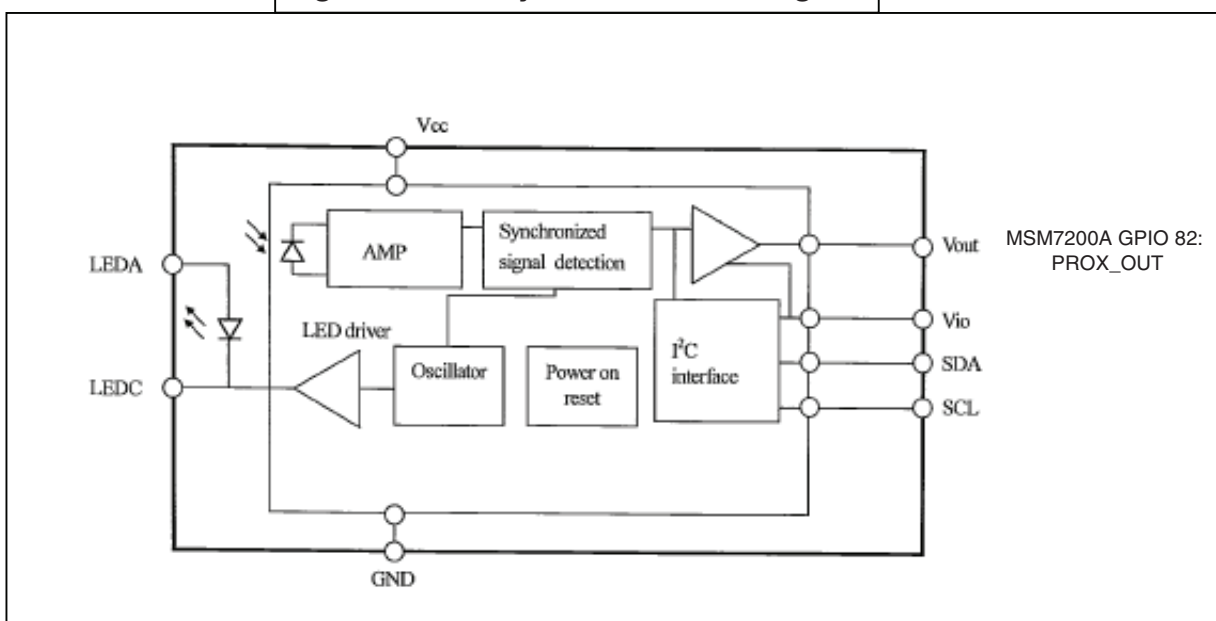


Figure. Proximity Sensor Block Diagram

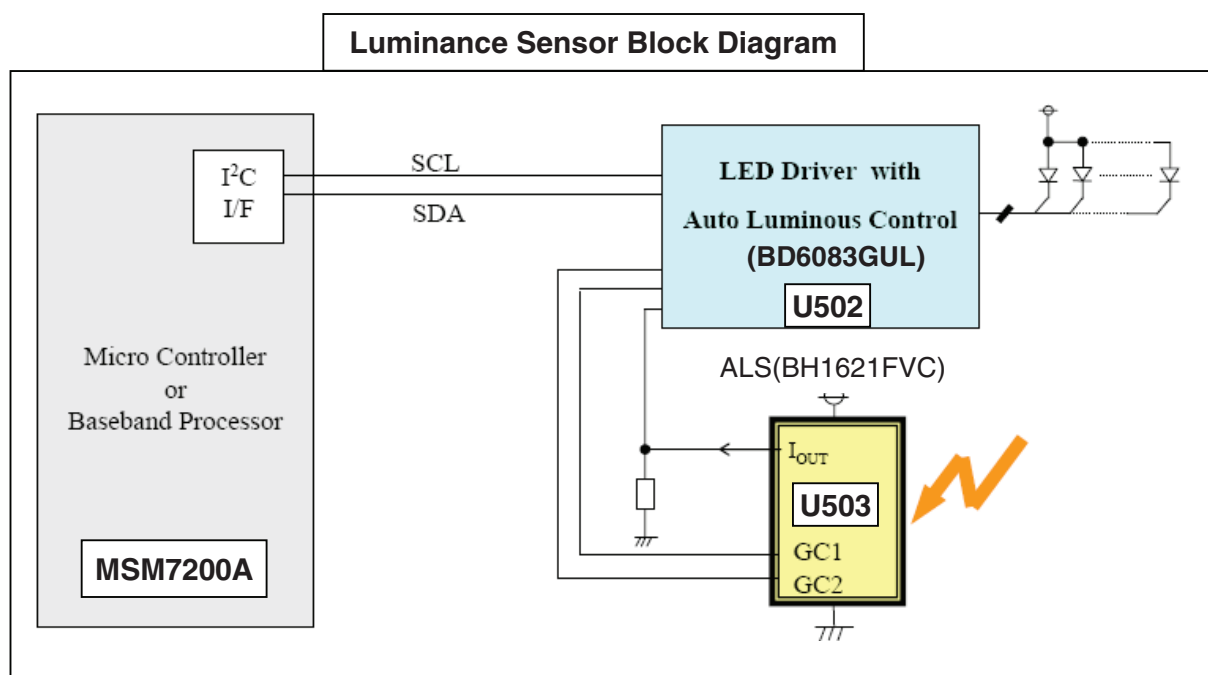
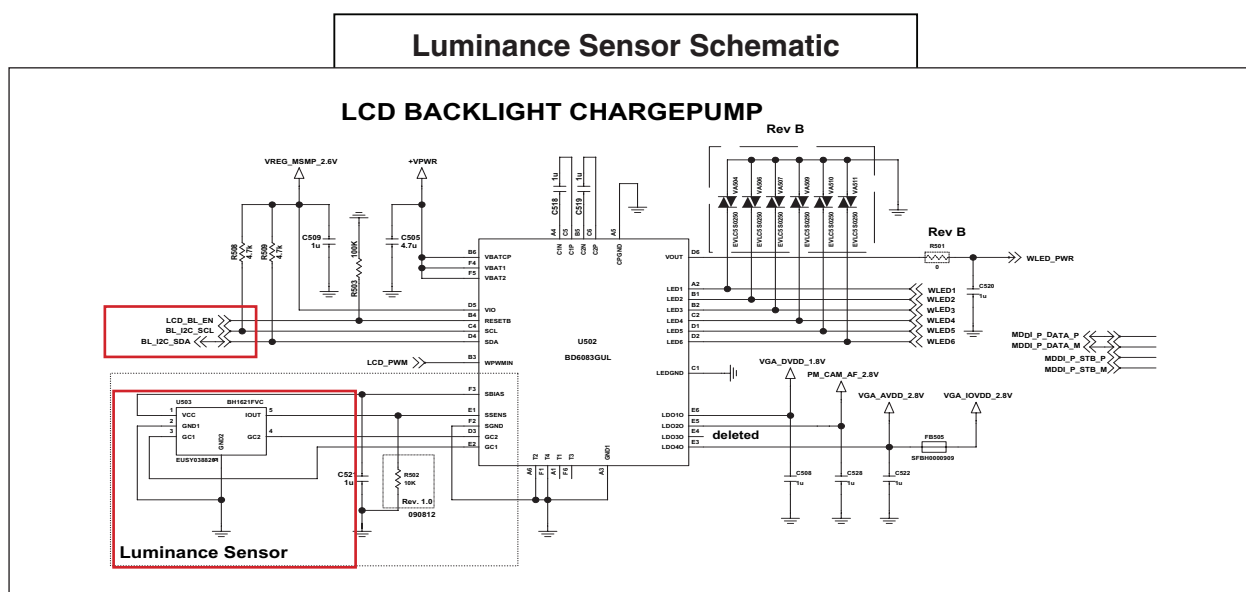


3.16 Luminance Sensor

When ALC sensor turn on, automatically controls brightness of the display backlight.

U502 : Backlight driver IC (BD6083) used I2C interface to MSM7200A

U503 : Luminance Sensor



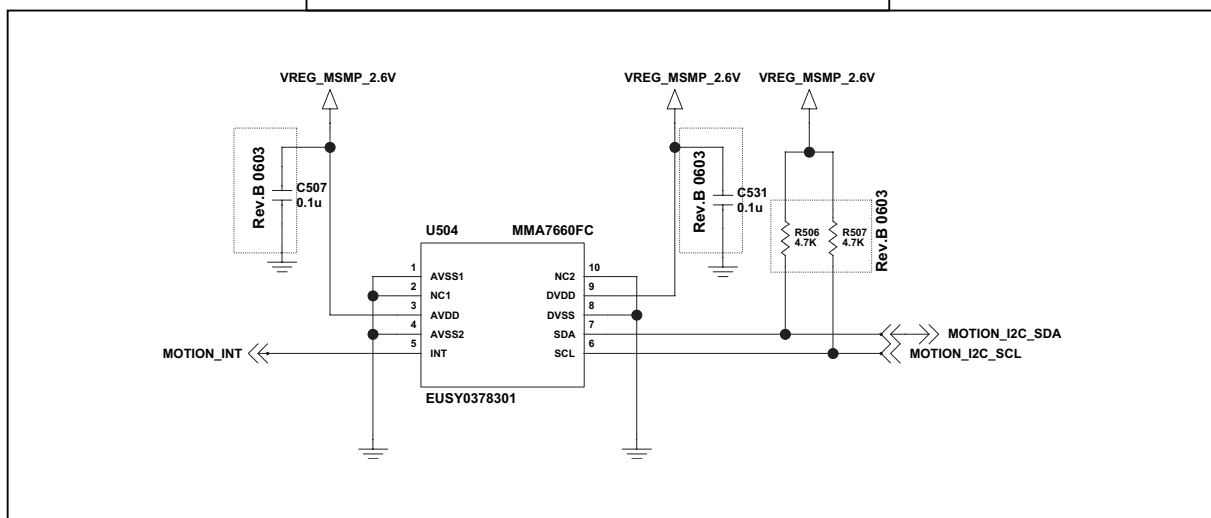
3. Technical Brief

3.17 Motion Sensor

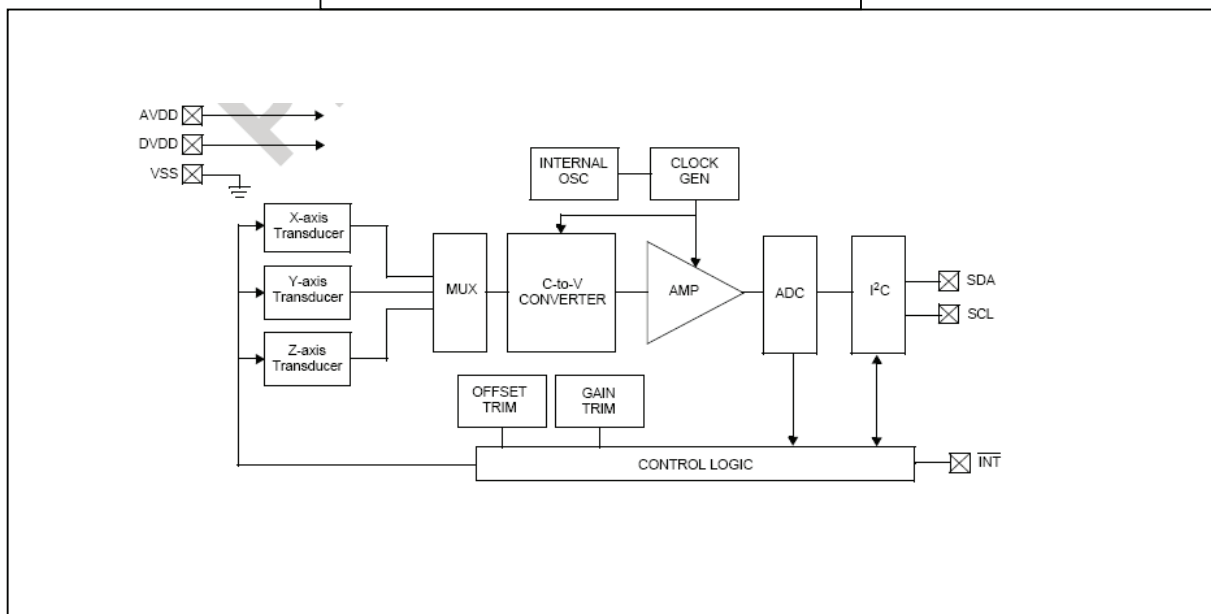
According to tilt the cell phone, the screen is had rotated automatically.

U504 :MMA7660FC IC used I2C interface to MSM7200A

Motion Sensor Schematic



Motion Sensor Block Diagram



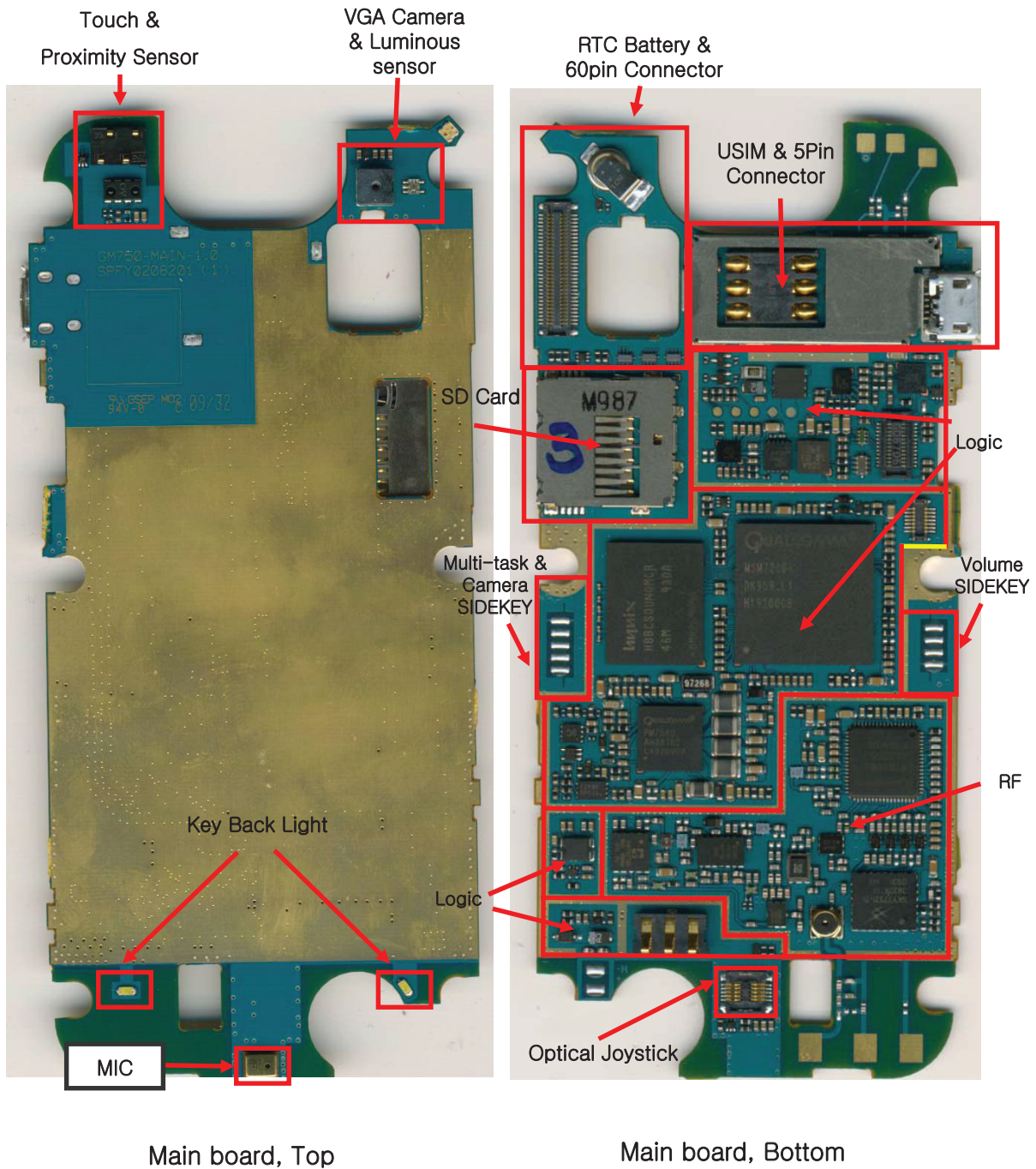
3.18 Main Features

1. LG GM750 Main Features

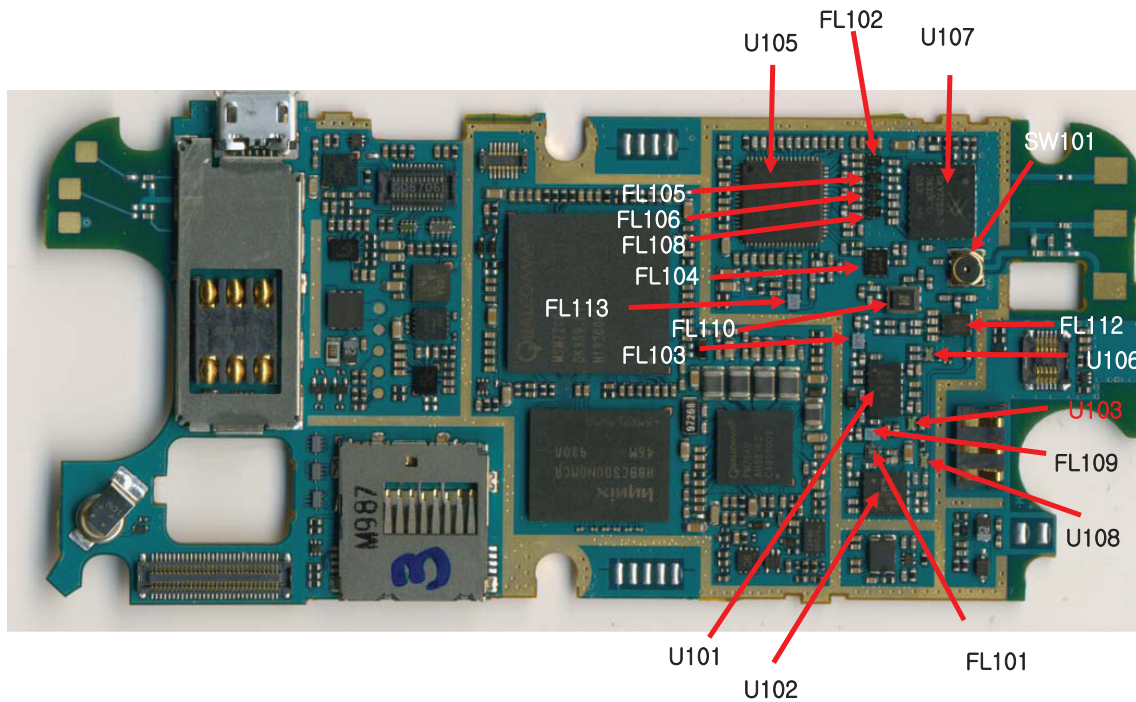
- Bar Type Simple & Stylish design
- UMTS 2100 + UMTS1900 + UMTS900+
GSM 900 + DCS 1800 + PCS 1900 + GSM850 based
GSM/GPRS/EDGE/UMTS
- HSDPA 3.6Mbps
- 3.0" WQVGA LCD (262K TFT)
- Touch Sensitive User Interface
- 5M AF Camera
- Stereo Headset & Speaker phone
- 72 Poly Sound
- MP3/AAC/AMR/MIDI/3GP/SMAF decoder and play
- MPEG4 encoder/decoder and play/save
- JPEG en/decoder`
- Supports Bluetooth and HS-USB
- Supports WLAN
- Internal User Memory over 128MB
- 1500 mAh (Li-Ion Polymer)
- Windows Mobile™ 6.5 Professional
- Microsoft Office Mobile

3. Technical Brief

2. GM750 Main Component



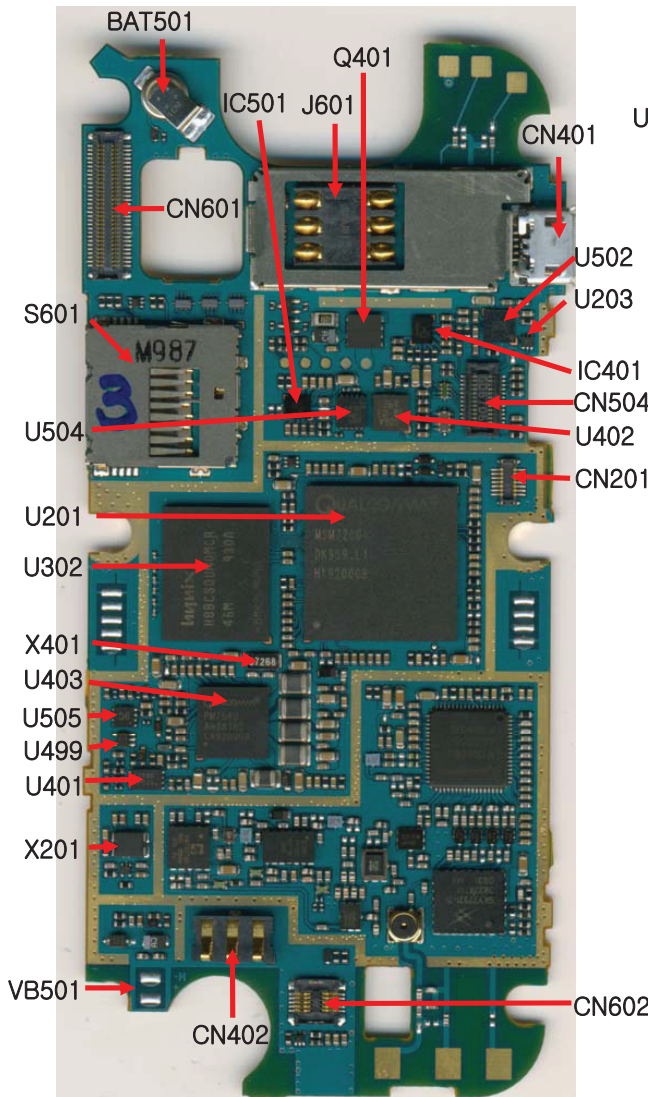
RF



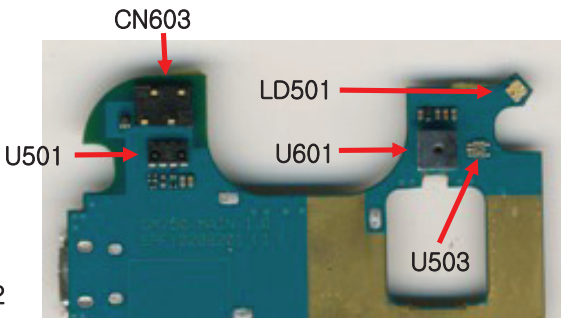
Reference	Description	Reference	Description
U105	RTR6285(Transceiver)	FL103	WCDMA (VIII) TX SAW
U107	FEM & GSM PAM	FL110	WCDMA (VIII) Duplexer
U101	WCDMA Dual (I,VIII) PAM	FL112	WCDMA (II) Duplexer
U102	WCDMA (II) PAM	FL104	WCDMA (I) Duplexer
FL101	WCDMA (II) TX SAW Filter	FL113	WCDMA (I) RX SAW Filter
FL109	WCDMA (I) TX SAW Filter	U104	GPS LNA
U108	WCDMA (II) Coupler	FL107	GPS SAW Filter
FL105	EGSM Rx SAW Filter	FL102	GSM850 Rx SAW Filter
U103	WCDMA (I) Coupler	FL108	PCS Rx SAW Filter
U106	WCDMA (VIII) Coupler	FL106	DCS Rx SAW Filter
SW101	Test Connector		

3. Technical Brief

Logic / BB / MEM / Audio



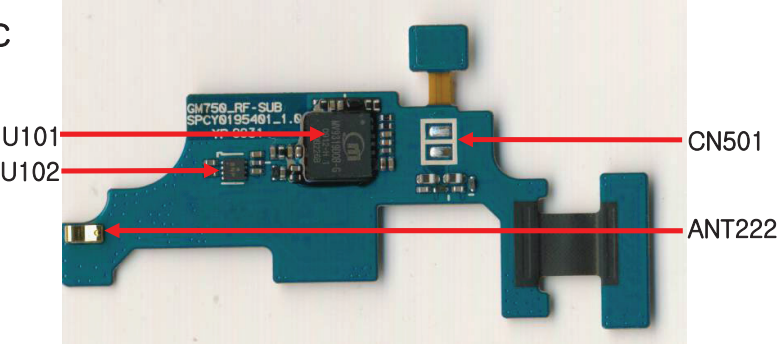
Main board, Bottom



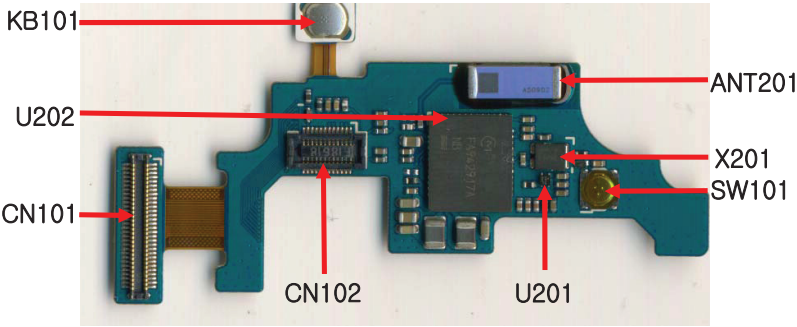
Main board, Top

Ref.	Description	Ref.	Description
U504	Motion Sensor	J601	SIM Connector
U505	Linear Motor Driver	Q401	Battery Charging IC
S601	Micro SD Card Socket	CN401	Micro USB 5pin Con.
BAT501	RTC Back-up Battery	U502	LCD Backlight Charge Pump
U201	MCU, MSM7200A	U203	LCD Level Shifter
U302	MCP, Hynix Memory	U402	High Speed USB Transceiver
X401	TCXO 32MHz	CN504	LCD 24pin Con.
U403	PMIC, PM7540	IC401	MUIC
CN601	Main Sub BtoB 60pin Con.	CN201	JTAG 14pin Con.
U499	Voltage Detector	CN602	OpticalJoystick 10pin Con.
U401	Fuel Gauge IC	U601	VGA Camera
X201	TCXO 19.2MHz	LD501	RGB LED
IC501	Audio Sub System	U501	Proximity sensor
VB501	Vibrator Pad	U503	Luminance Sensor
CN402	3pin Battery Con.	CN603	4pin Touch Screen Con.

Logic



Sub Board, Top



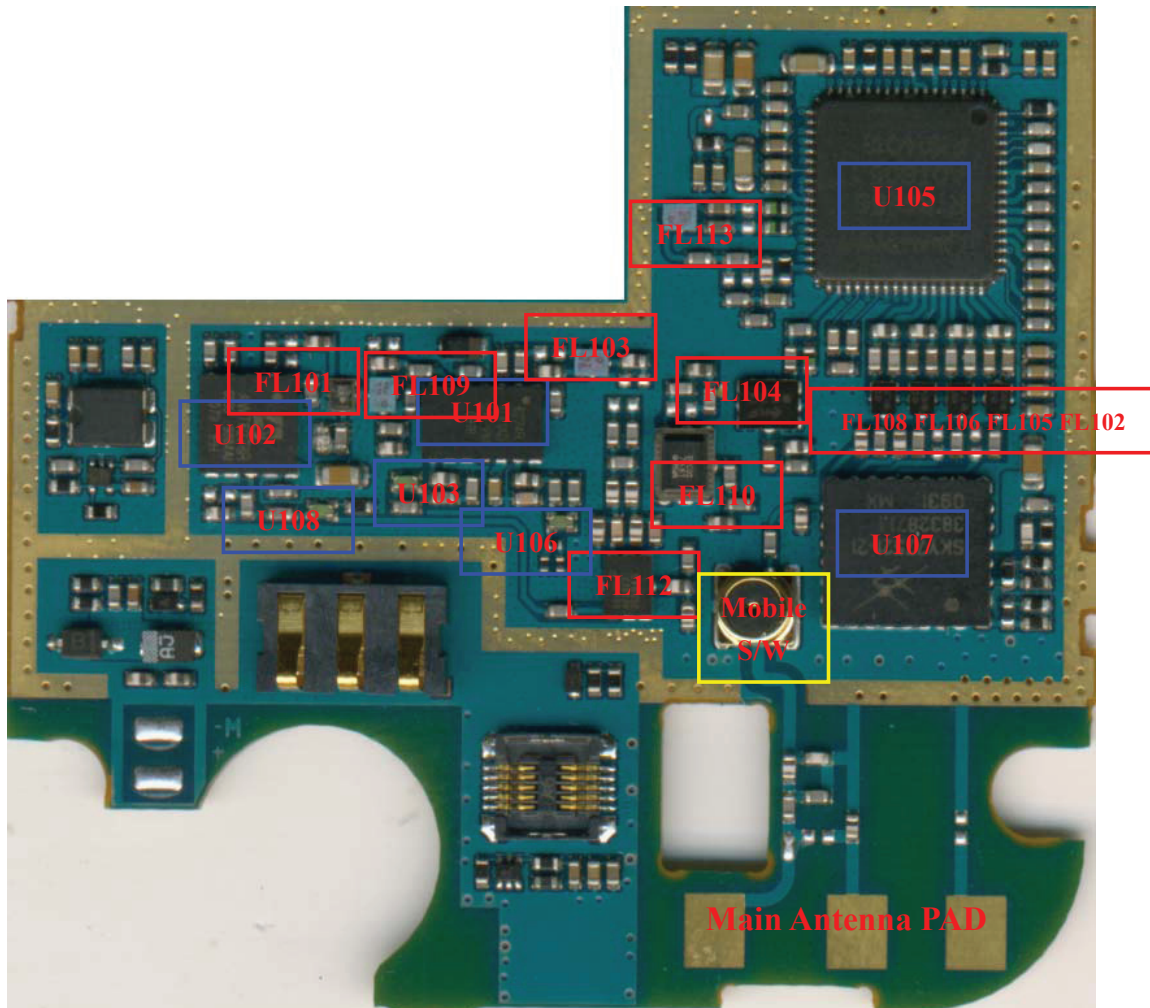
Sub Board, Bottom

Ref.	Description	Ref.	Description
U101	5M Camera ISP	CN101	Sub To Main 60pin Con.
U102	5M Camera LDO	CN102	5M Camera Connector
CN501	Speaker Pad	U201	TCXO LDO
ANT222	C-Clip for the GPS	SW101	Reset Key
KB101	Power ON/OFF Key	X201	26MHz TCXO
U202	Wi-Fi & BT&FM Module	ANT201	Blue Tooth ANT

4. TROUBLE SHOOTING

4. TROUBLE SHOOTING

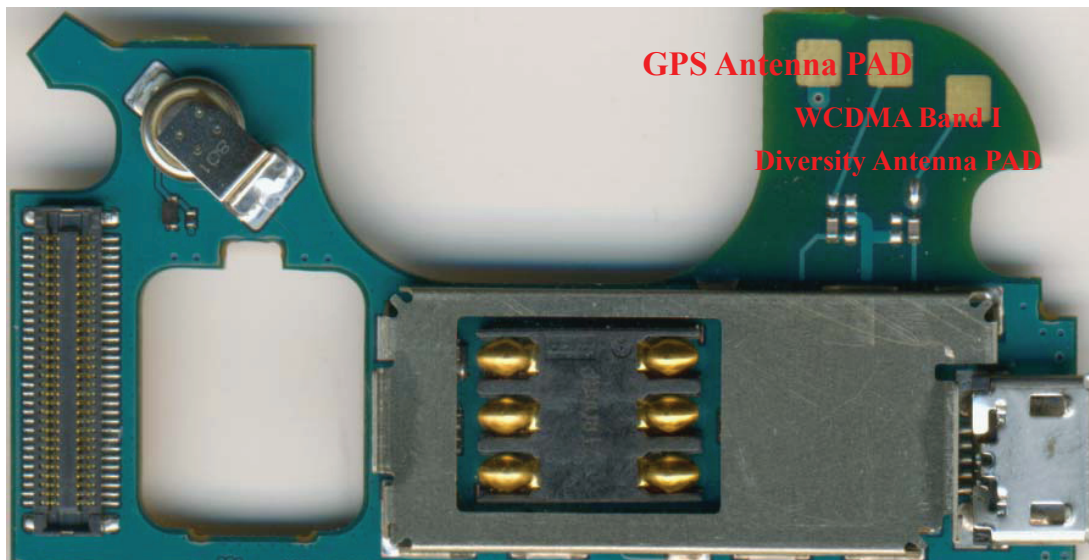
4.1 RF Component



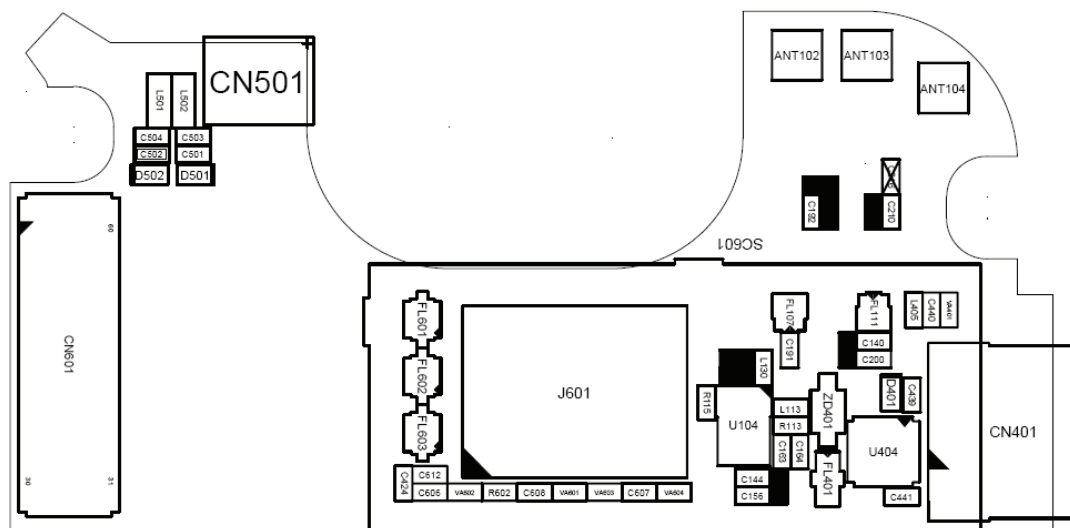
4. TROUBLE SHOOTING

RF component (WCDMA / GSM)

Reference	Description	Reference	Description
U105	RTR6285(Transceiver)	FL103	WCDMA (VIII) TX SAW
U107	FEM & GSM PAM	FL110	WCDMA (VIII) Duplexer
U101	WCDMA Dual (I,VIII) PAM	FL112	WCDMA (II) Duplexer
U102	WCDMA (II) PAM	FL104	WCDMA (I) Duplexer
FL101	WCDMA (II) TX SAW Filter	FL113	WCDMA (I) RX SAW Filter
FL109	WCDMA (I) TX SAW Filter	U104	GPS LNA
U108	WCDMA (II) Coupler	FL107	GPS SAW Filter
FL105	EGSM Rx SAW Filter	FL102	GSM850 Rx SAW Filter
U103	WCDMA (I) Coupler	FL108	PCS Rx SAW Filter
U106	WCDMA (VIII) Coupler	FL106	DCS Rx SAW Filter

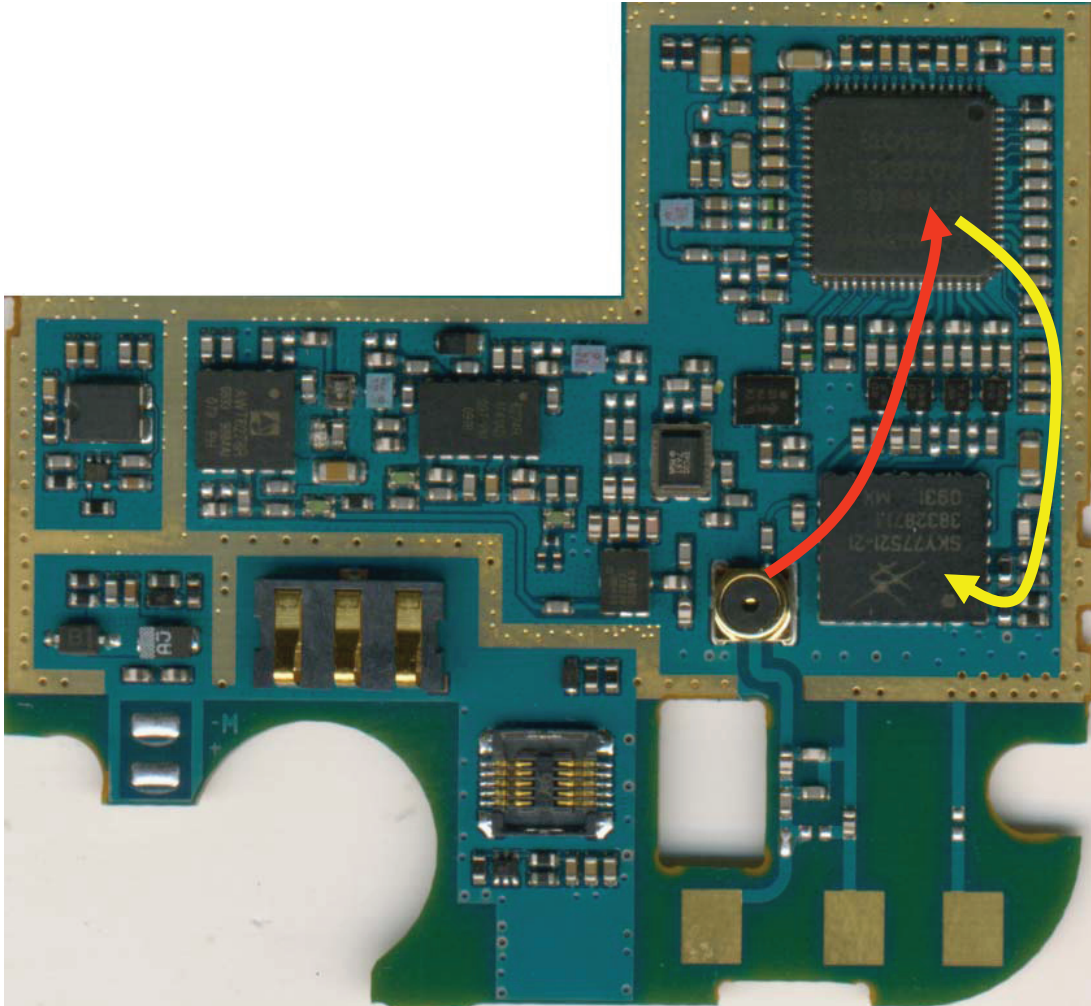


RF component (WCDMA(I) Diversity, Antenna PAD)



RF component (GPS LNA(U104), W2100 Diversity RX SAW(FL111))

4.2 SIGNAL PATH

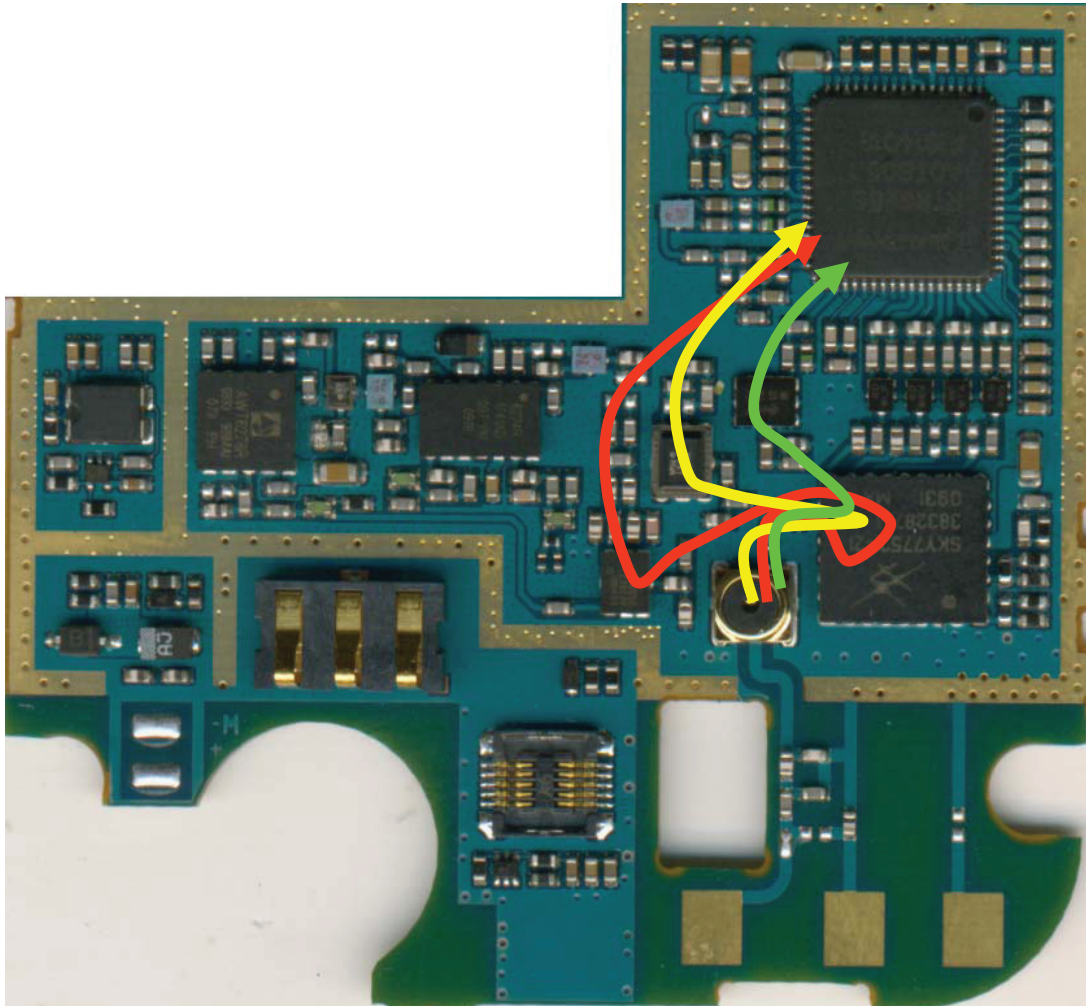


GSM850/GSM900/DCS/PCS's RX/TX Signal PATH

A. GSM850/GSM900/DCS1800/PCS1900 RX PATH

B. GSM850/GSM900/DCS1800/PCS1900 TX PATH

4. TROUBLE SHOOTING

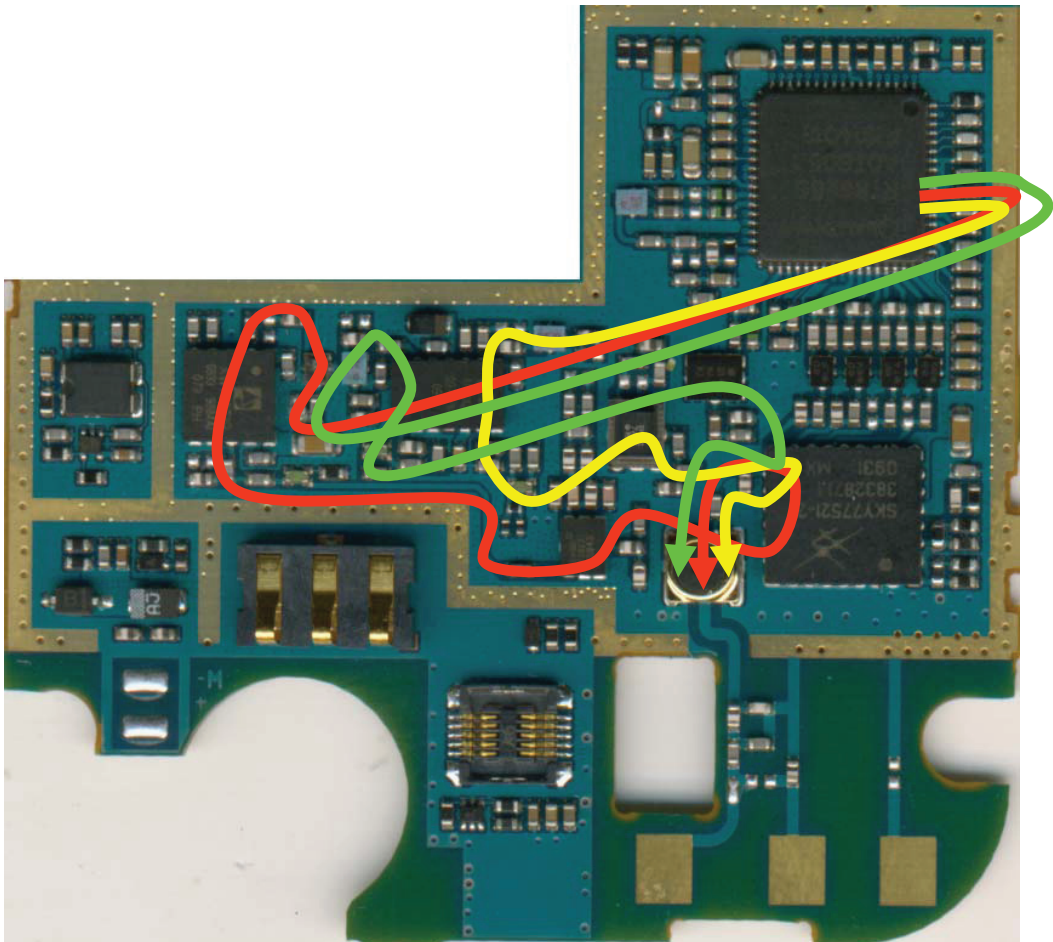


WCDMA I,II and VIII Band RX Signal PATH

C. WCDMA 1900 RX PATH

D. WCDMA 900 RX PATH

E. WCDMA 2100 RX PATH

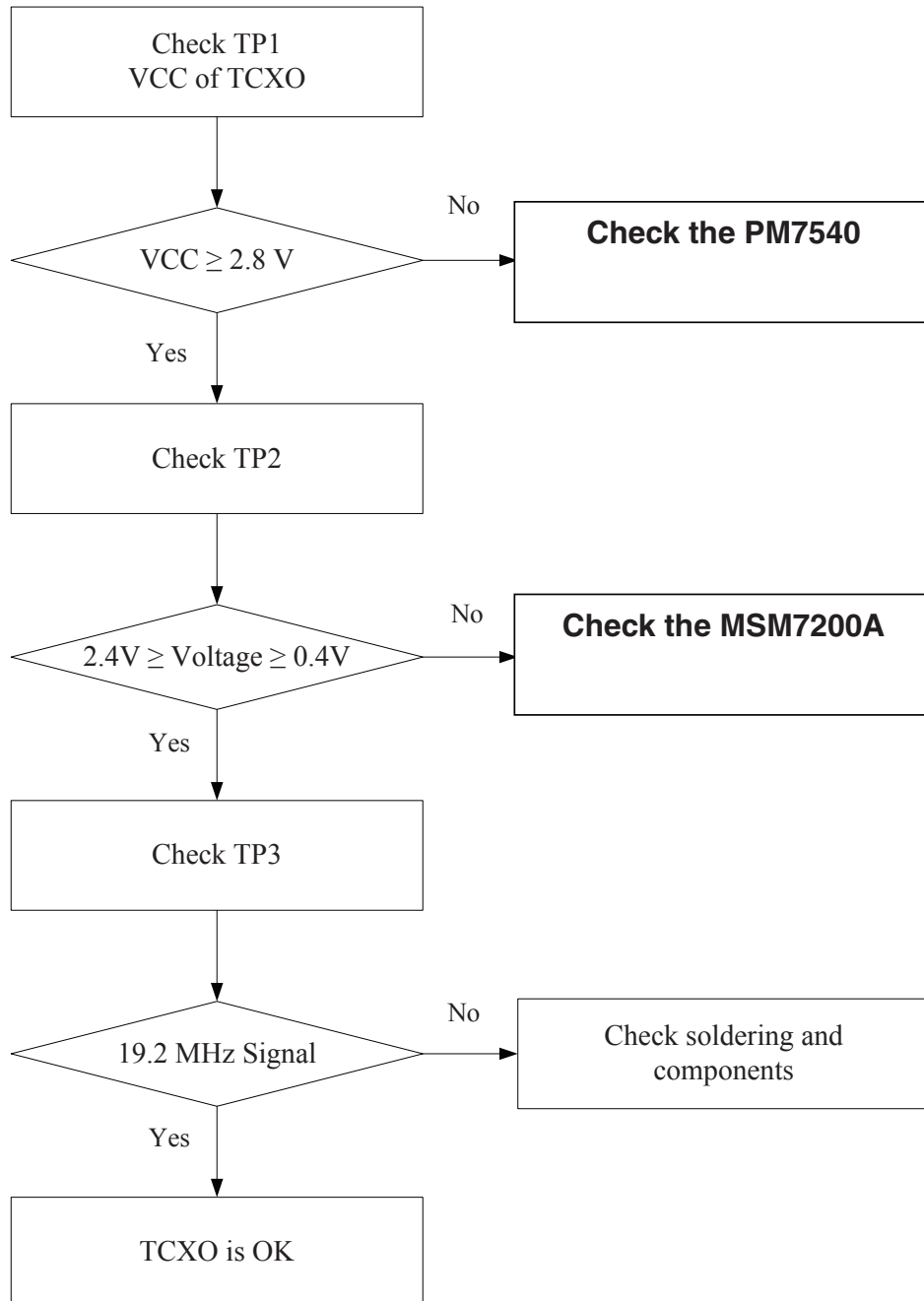


WCDMA I,II and VIII Band TX Signal PATH

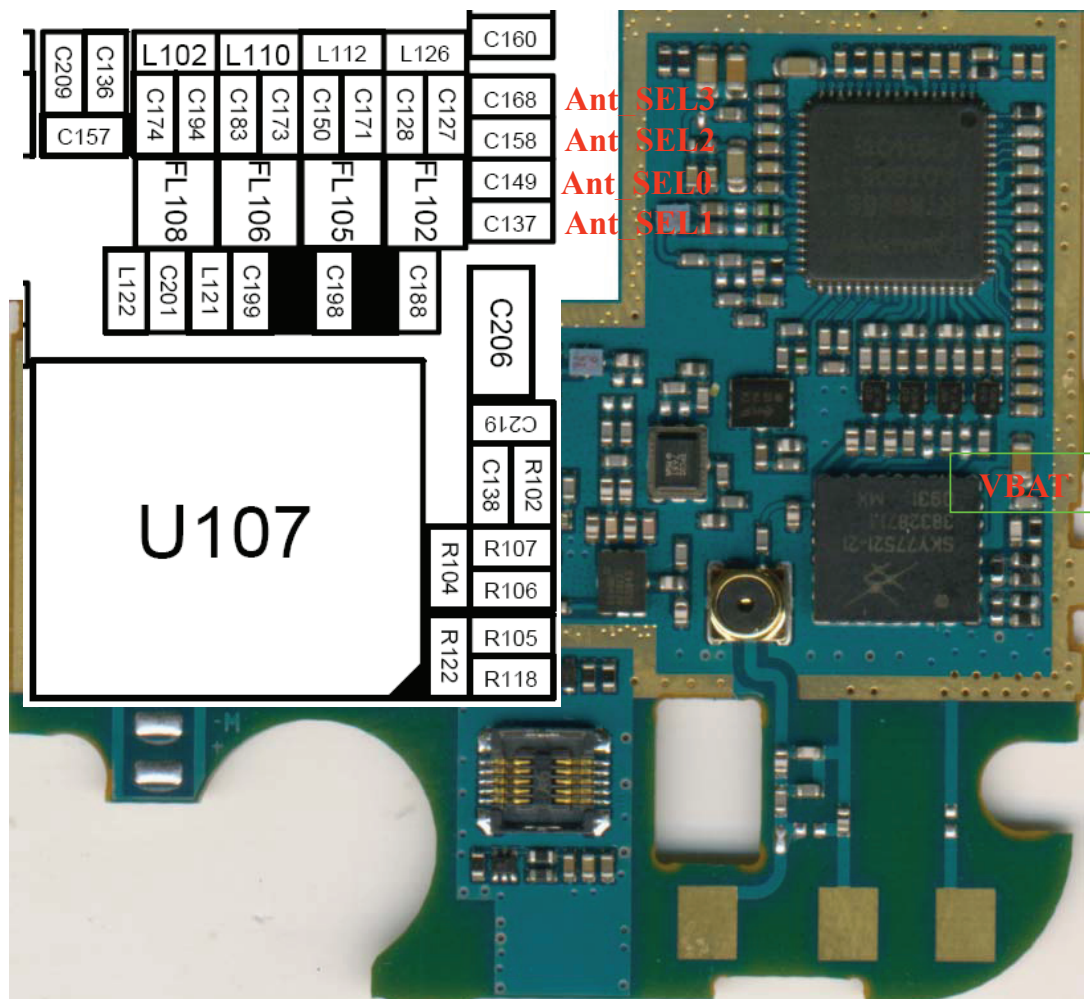
C1. WCDMA 1900 TX PATH

D1. WCDMA 900 TX PATH

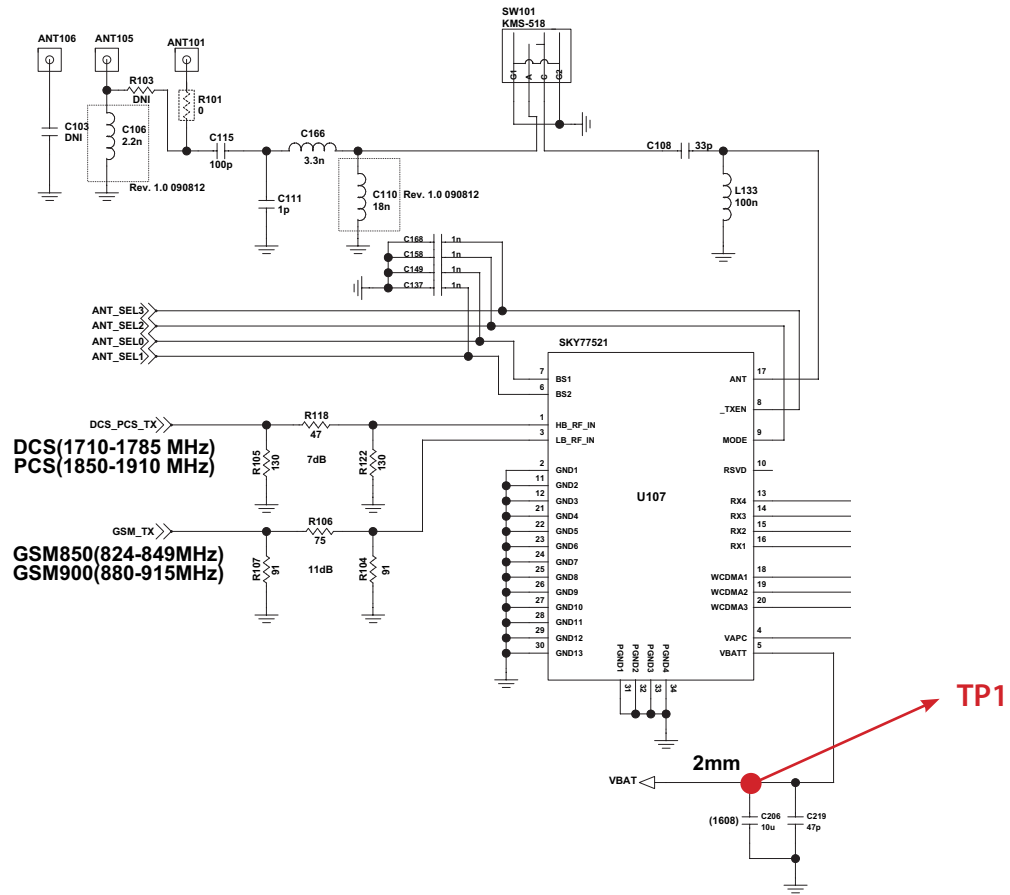
E1. WCDMA 2100 TX PATH



4.4 Checking Front End Module (FEM) Block



4. TROUBLE SHOOTING



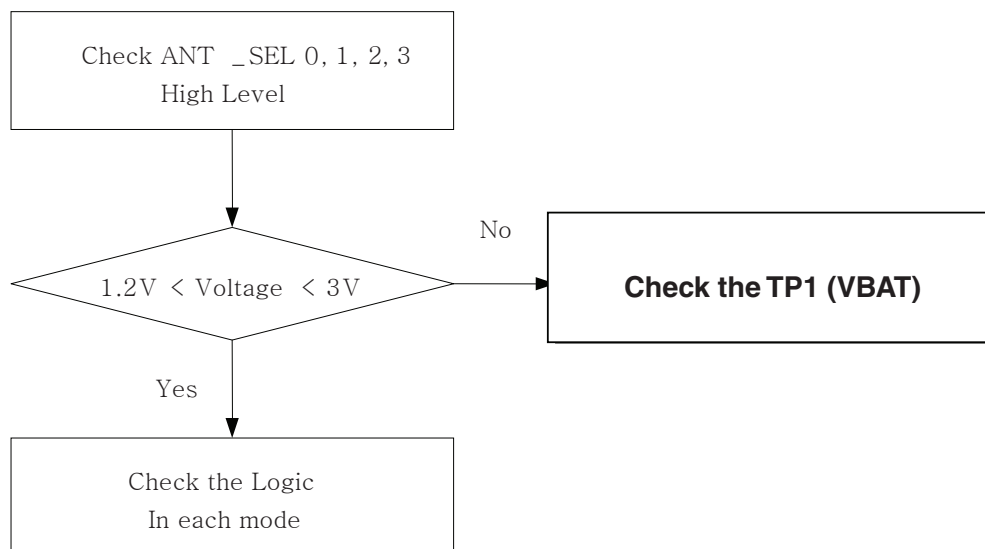
Schematic of the Antenna Switch Block

4. TROUBLE SHOOTING

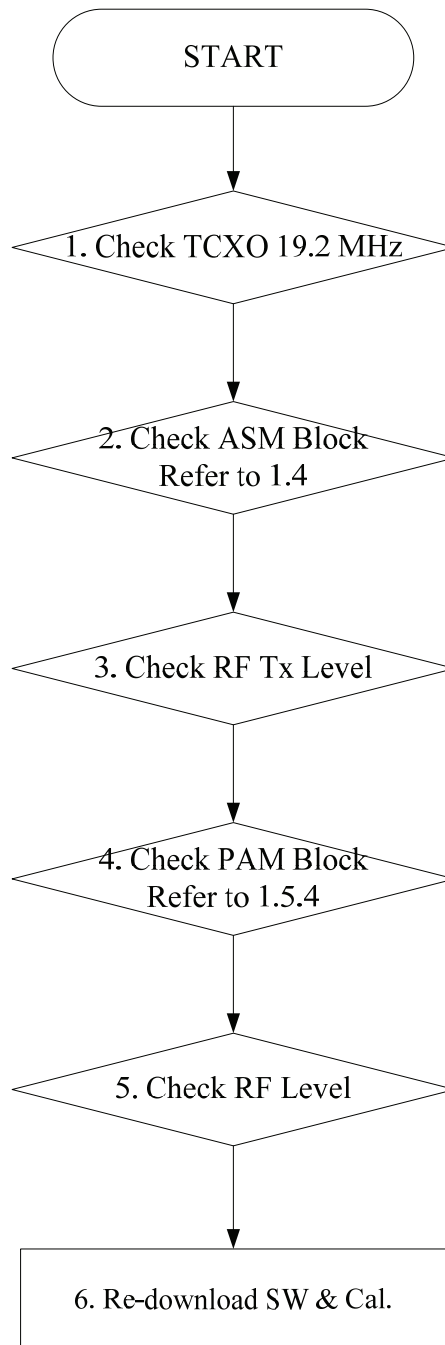
ANTENNA SWITCH MODULE LOGIC(SKY77521)

BAND	ANT_SEL0	ANT_SEL1	ANT_SEL2	ANT_SEL3
GSM850/EGSM TX	LOW	HIGH	LOW	LOW
PCN/PCS TX	HIGH	HIGH	LOW	LOW
WB 850/900	LOW	LOW	HIGH	LOW
WB 1900	HIGH	LOW	HIGH	LOW
WB 2100	HIGH	LOW	LOW	LOW
GSM850 RX	HIGH	LOW	LOW(X)	HIGH
EGSM RX	HIGH	HIGH	LOW(X)	HIGH
DCN RX	LOW	HIGH	LOW(X)	HIGH
PCS RX	LOW	LOW	LOW(X)	HIGH

Checking Switch Block Power Source



4.5 Checking WCDMA Block



4. TROUBLE SHOOTING

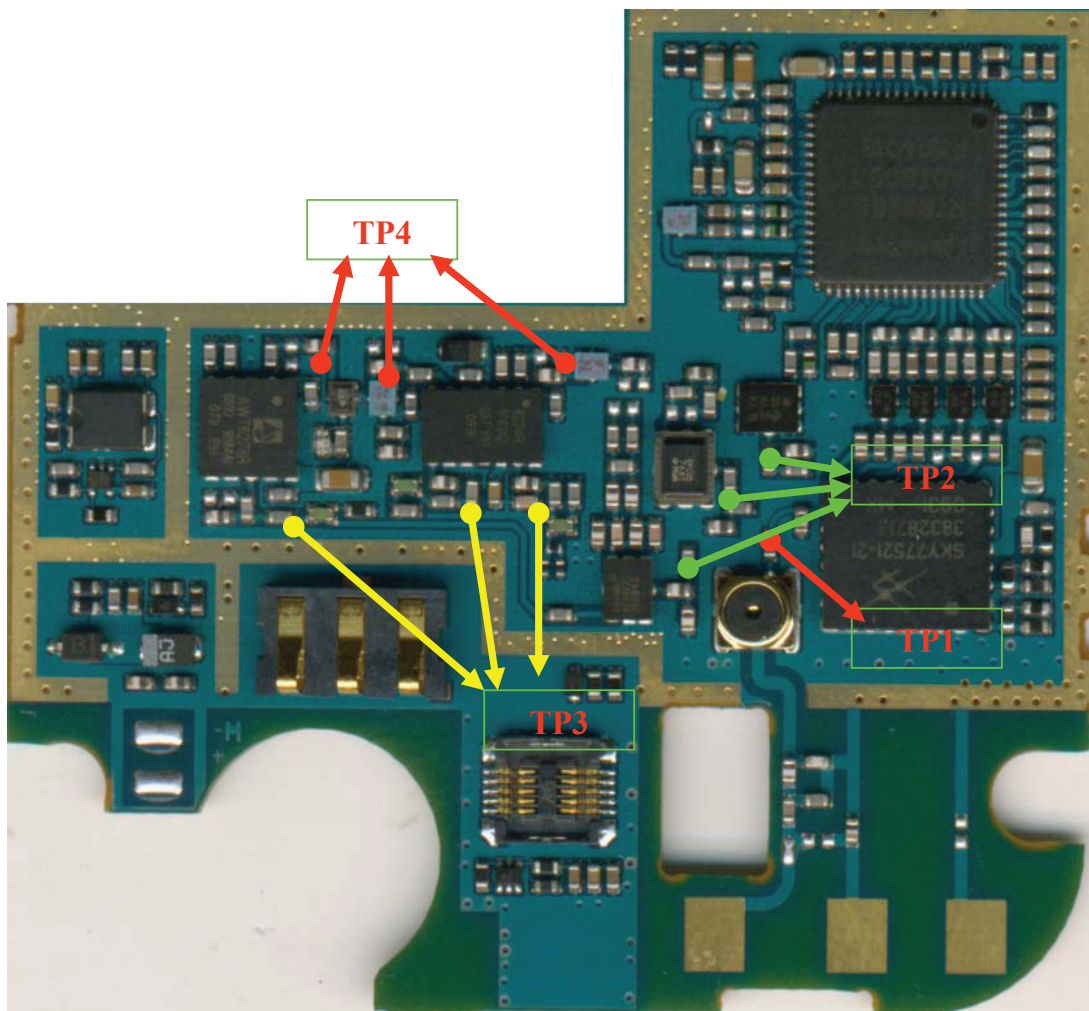
4.5.1 Checking TCXO Block

Refer to 4.3

4.5.2. Checking FEM Block (SKY77521)

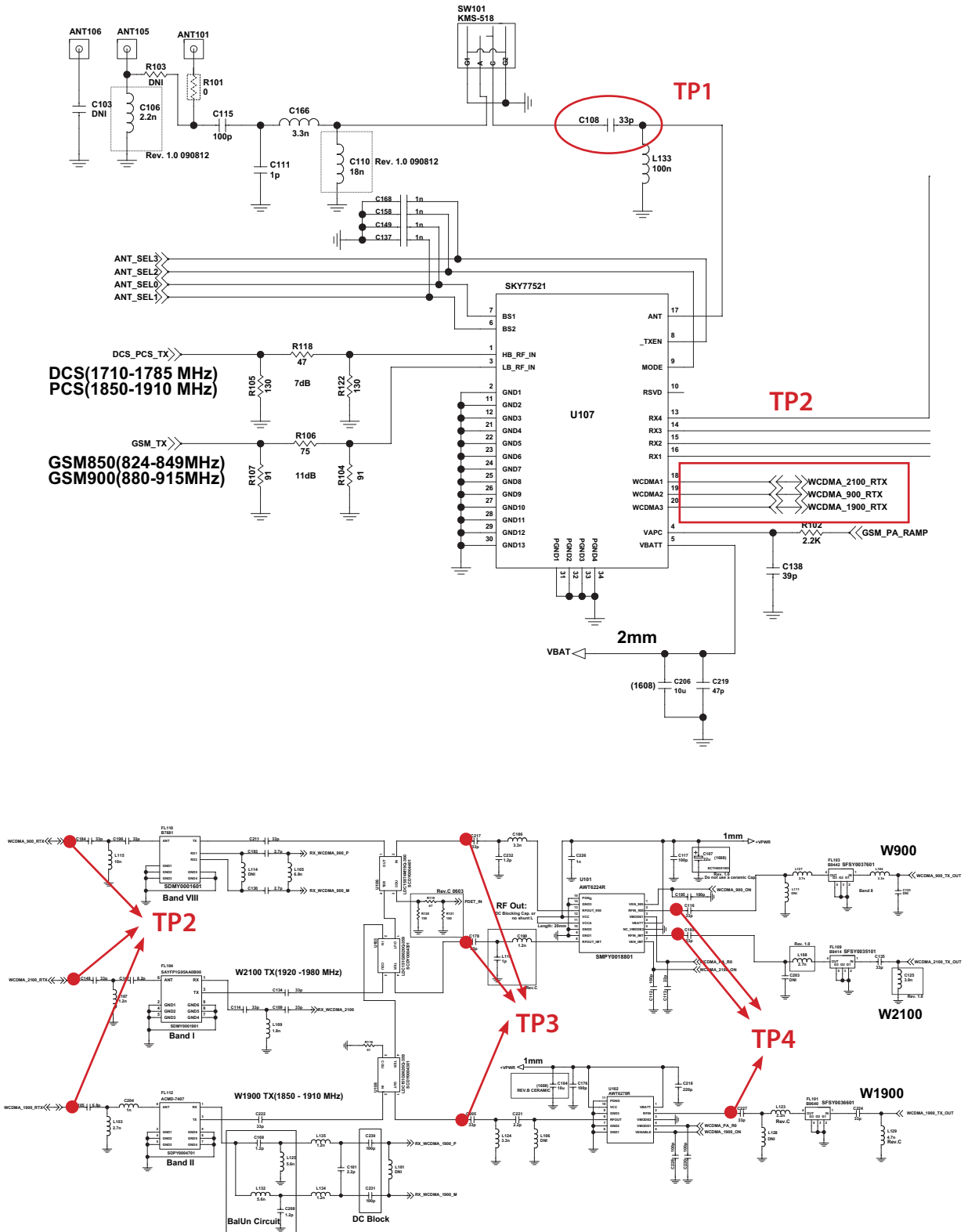
Refer to 4.4

4.5.3. Checking RF TX Level



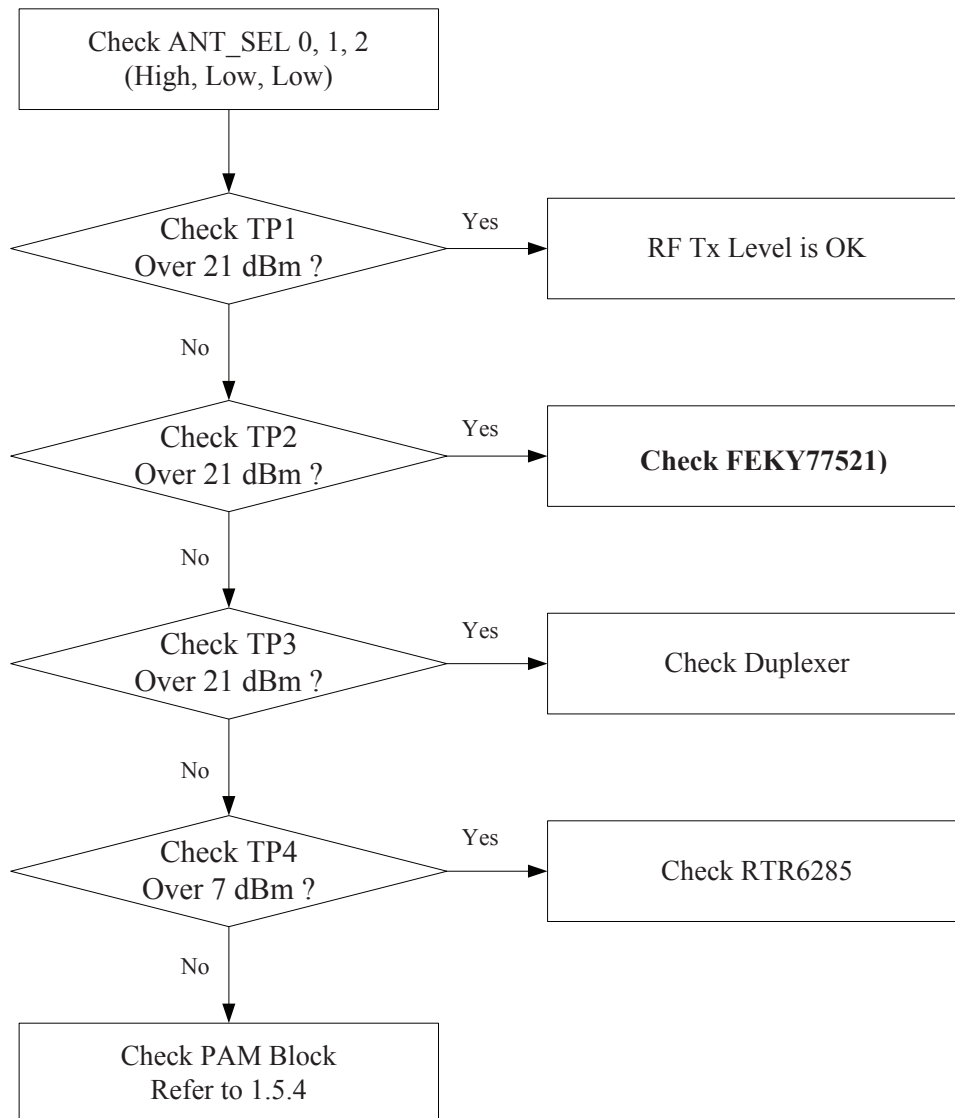
Test Point (TX Level)

4. TROUBLE SHOOTING



4. TROUBLE SHOOTING

For testing, Max power output is needed.



RTR6285 Maximum output Power = 7 dBm
RTR6285 minimum output Power = -80 dBm
PAM(ACPM-7381) = Maximum input Power = 10 dBm

4.5.4. Checking PAM Block

PAM control signal

PA_ON(WCDMA_900_ON(C195), WCDMA_1900_ON(C228) and
WCDMA_2100_ON(C112)) : PAM Enable

PA_R0: PAM Gain Control

PA_ON must be HIGH (over 2.6V).

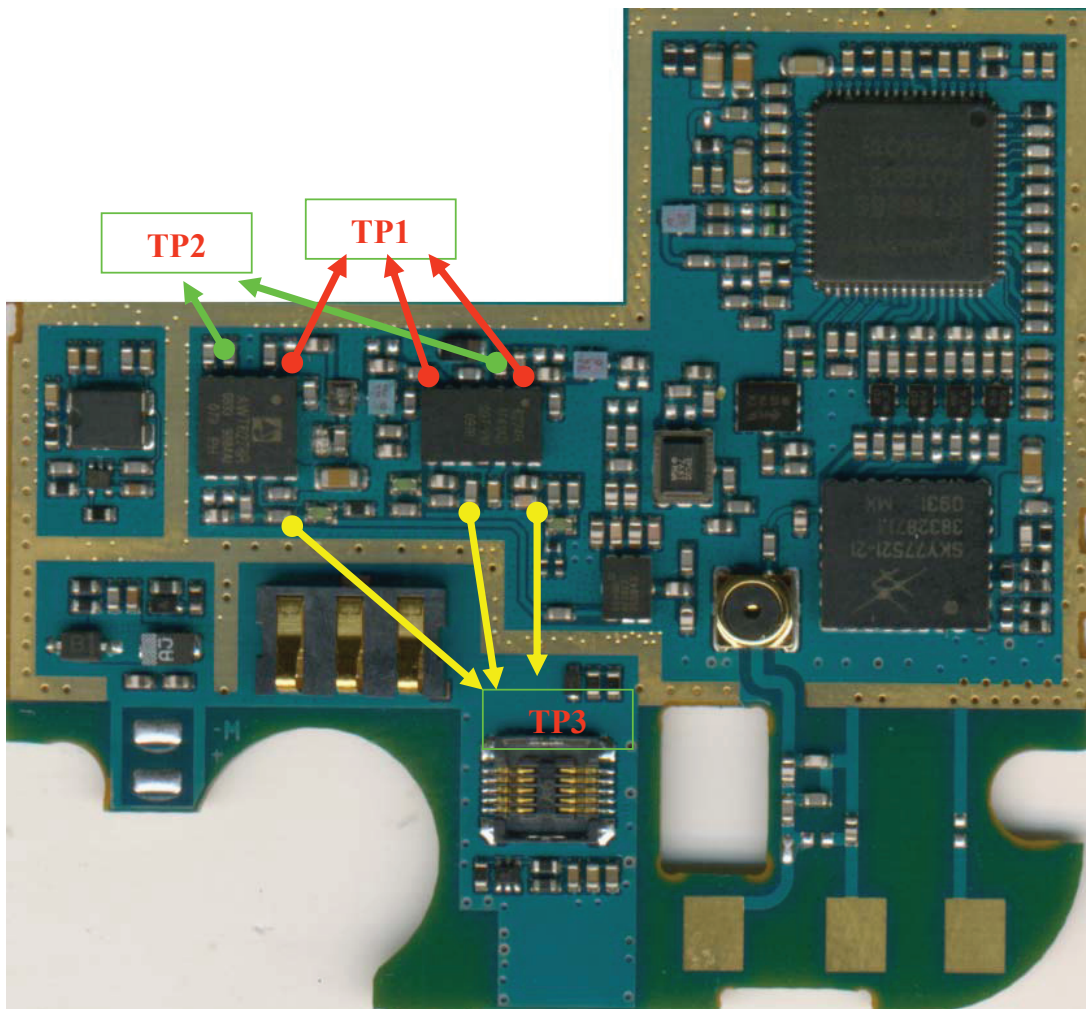
4. TROUBLE SHOOTING

PAM IN/OUT Signal :

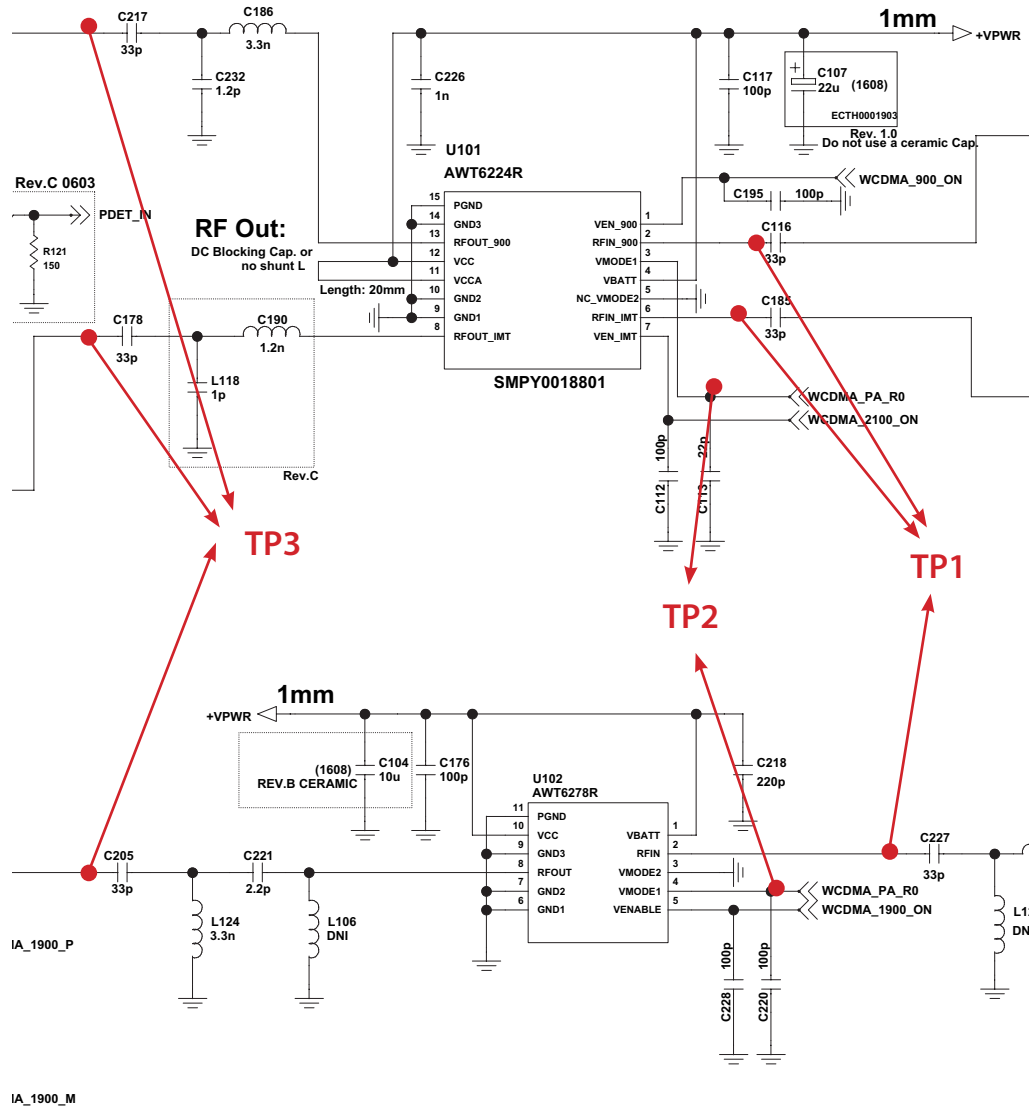
When PAM is under the operation of high power mode (**PA_R0 (C113, C220): Low**),

PAM OUT power must be over 21 dBm

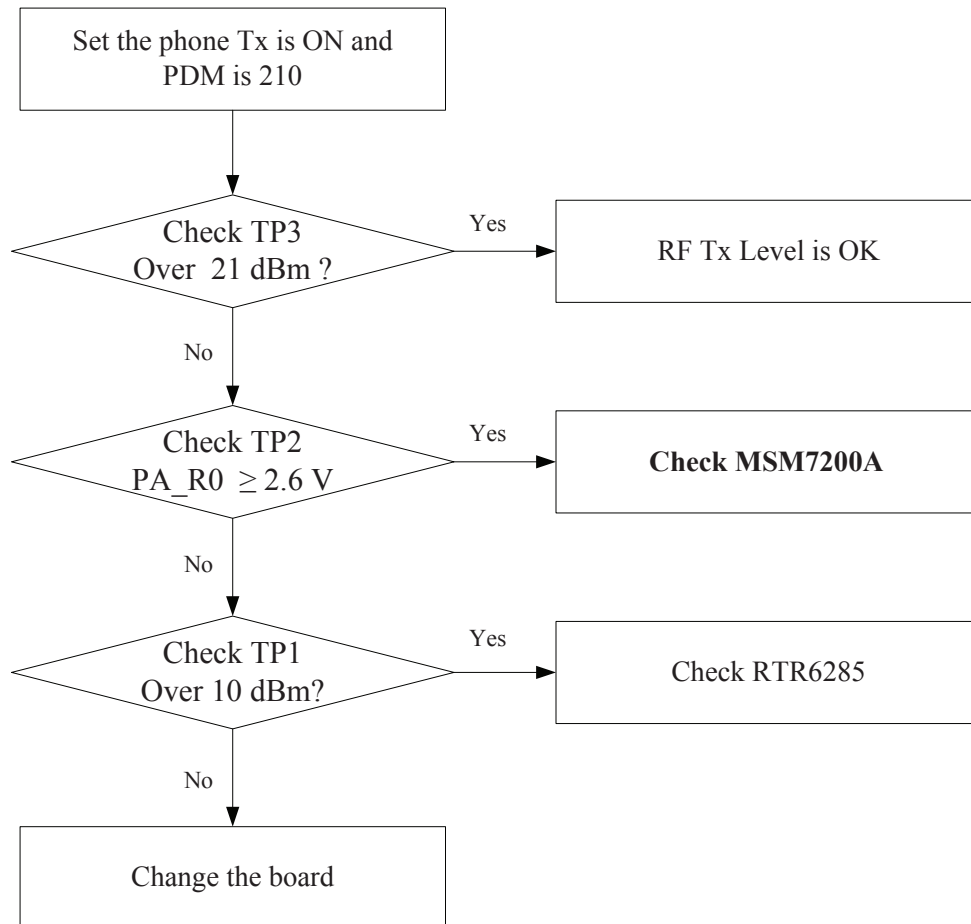
PAM IN power must be under 10 dBm



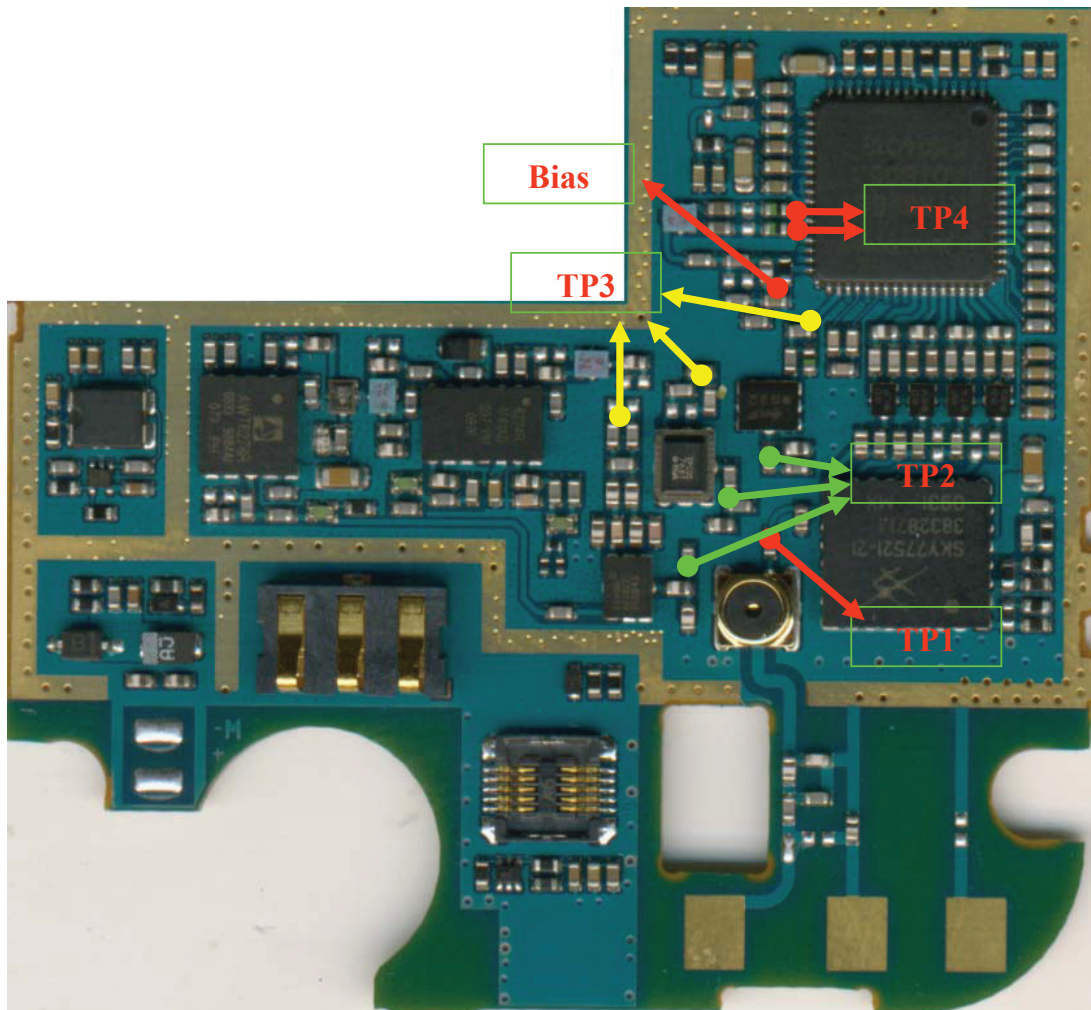
4. TROUBLE SHOOTING



4. TROUBLE SHOOTING

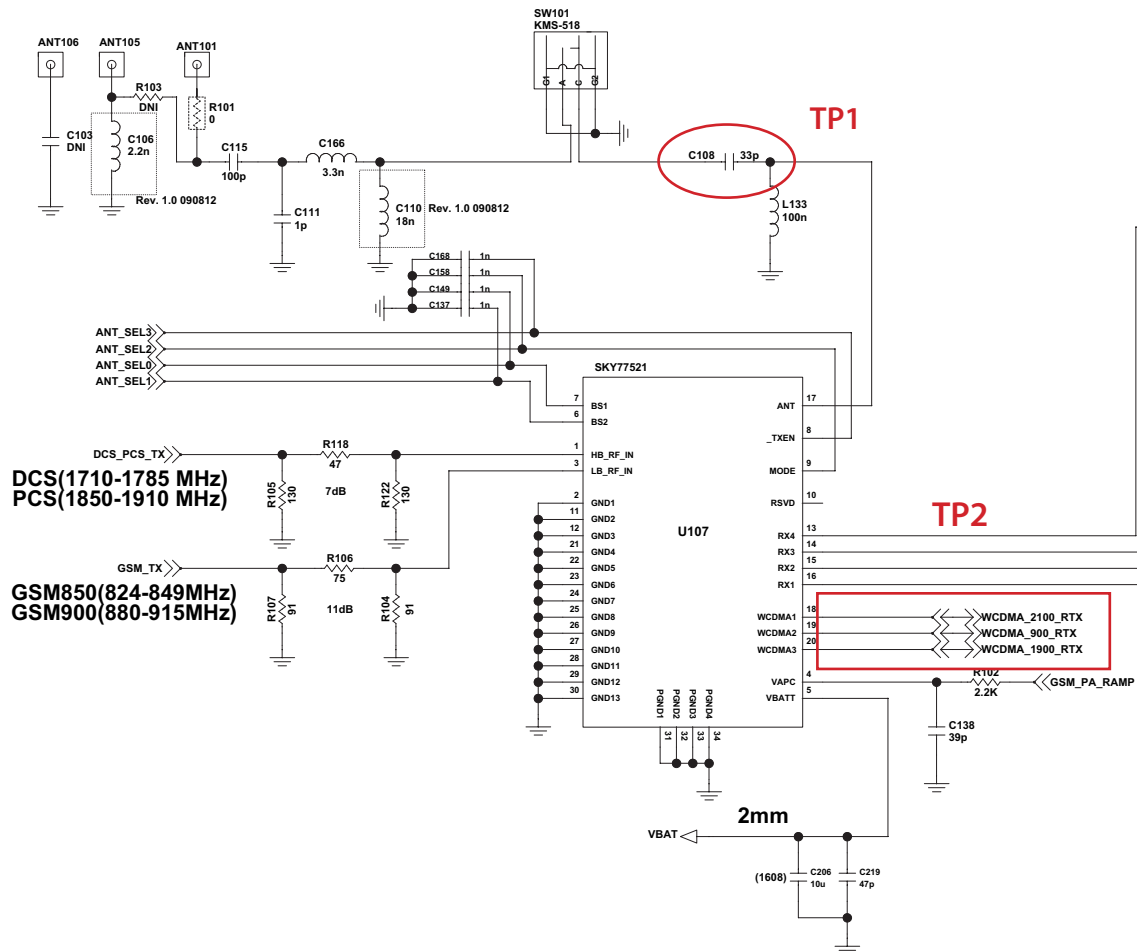


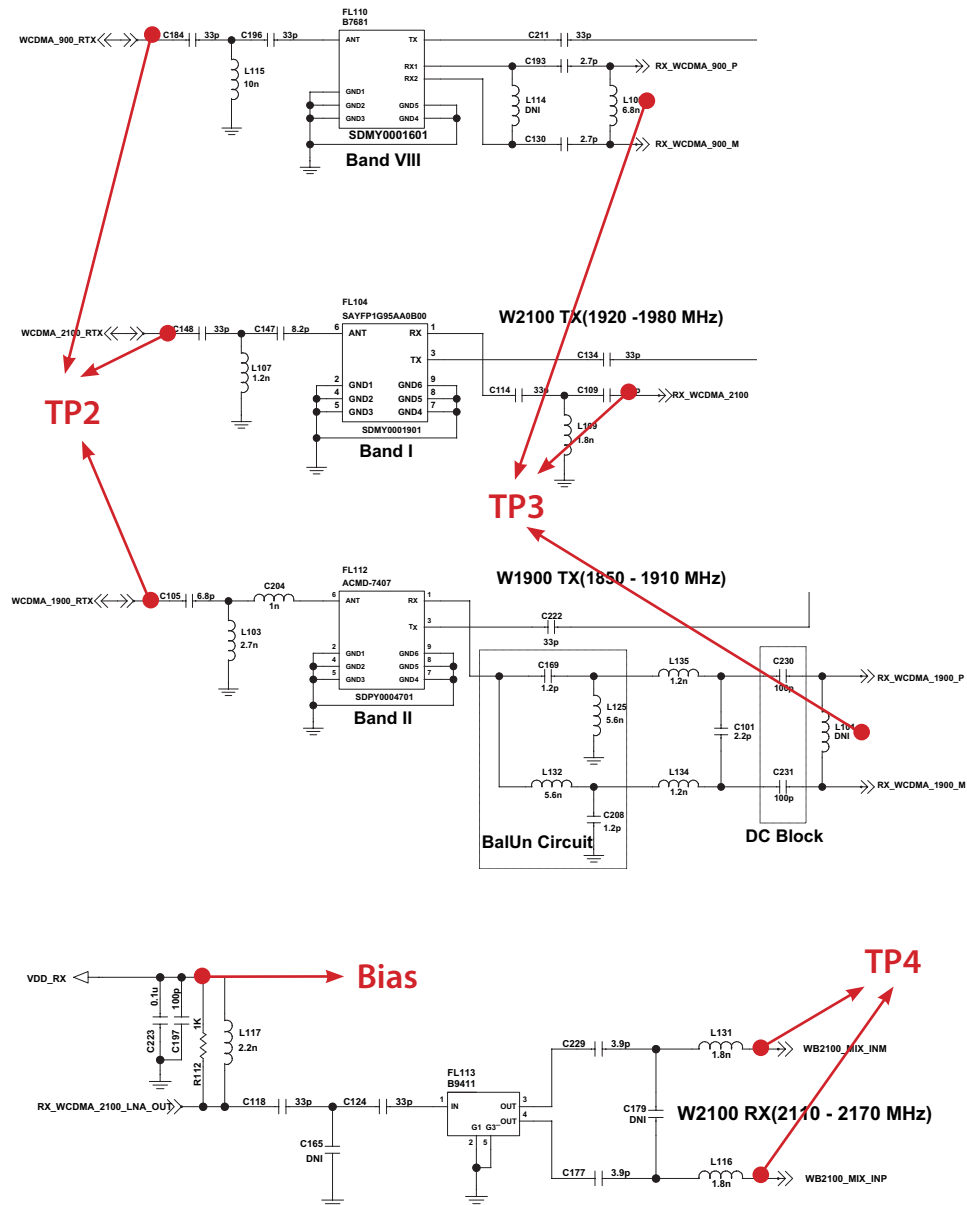
4.5.5. Checking RF Rx Level



Test Point (RF Rx Level)

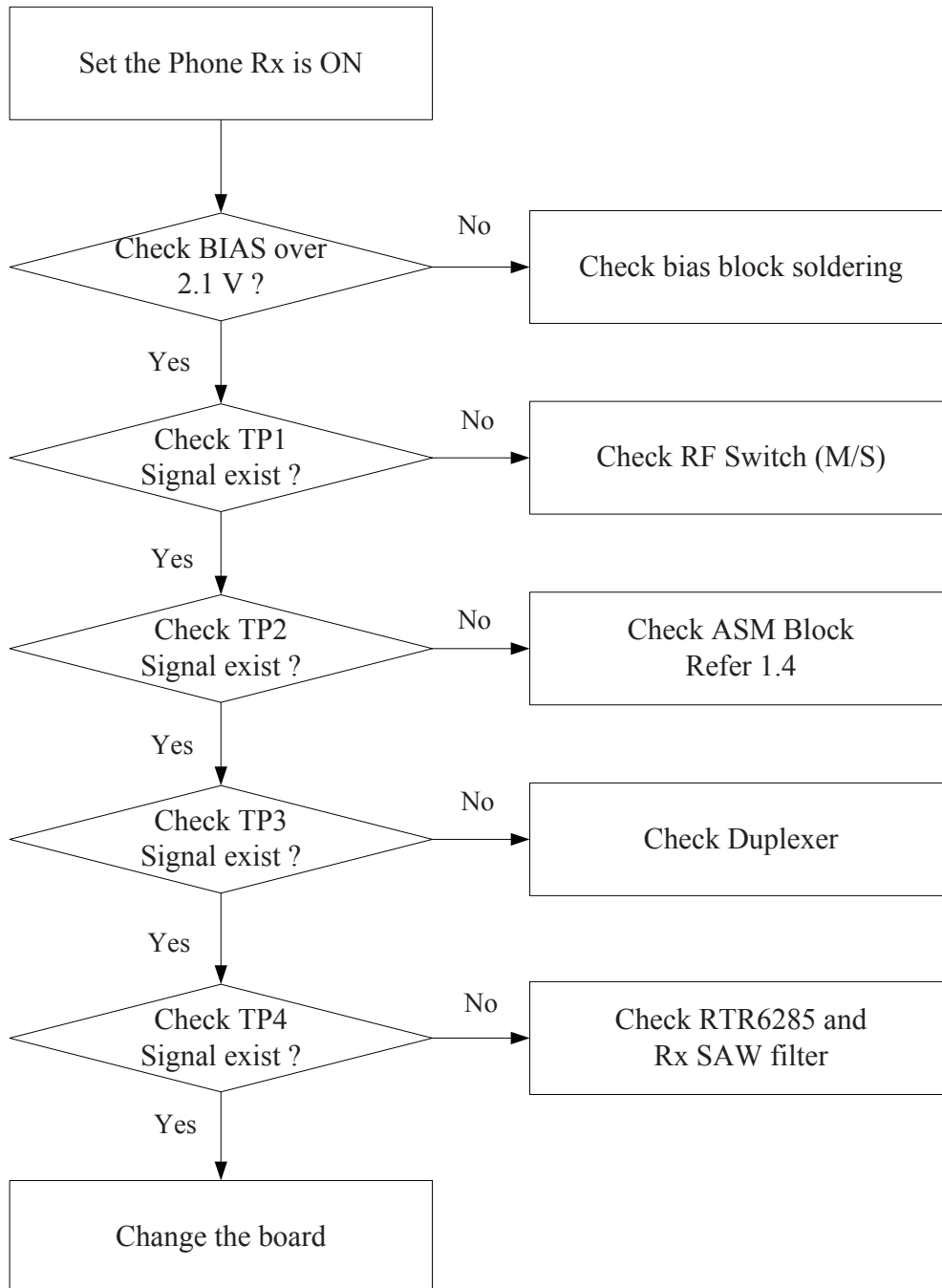
4. TROUBLE SHOOTING



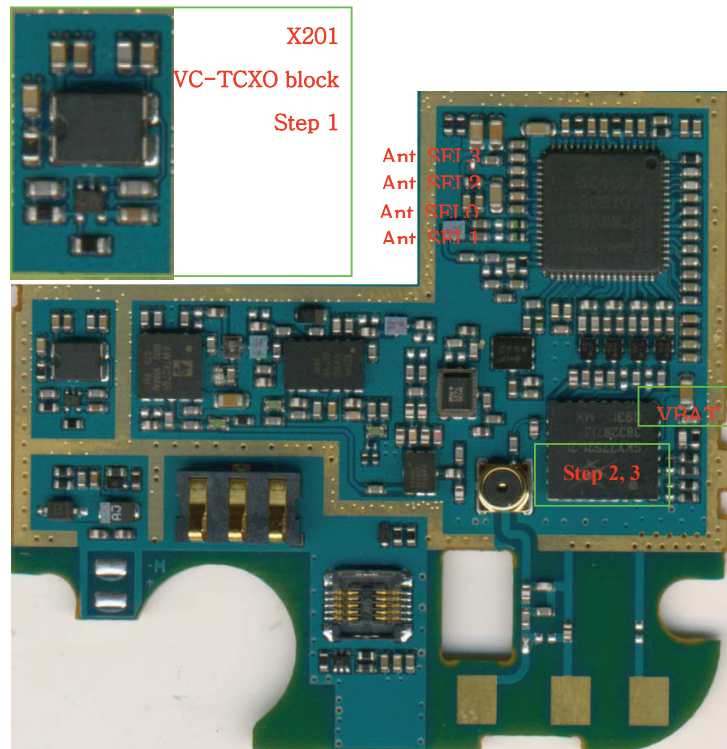
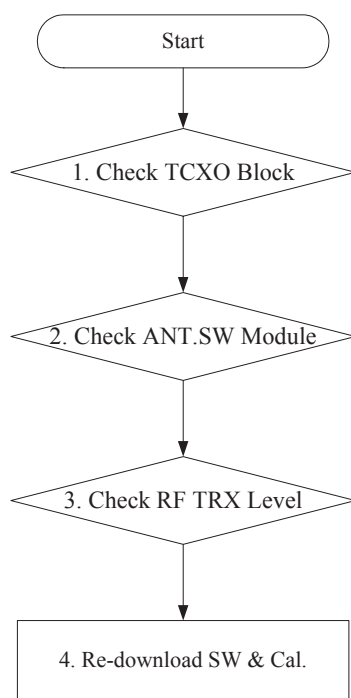


WCDMA RX 2100 LNA Circuit

4. TROUBLE SHOOTING



4.6 Checking GSM Block



4. TROUBLE SHOOTING

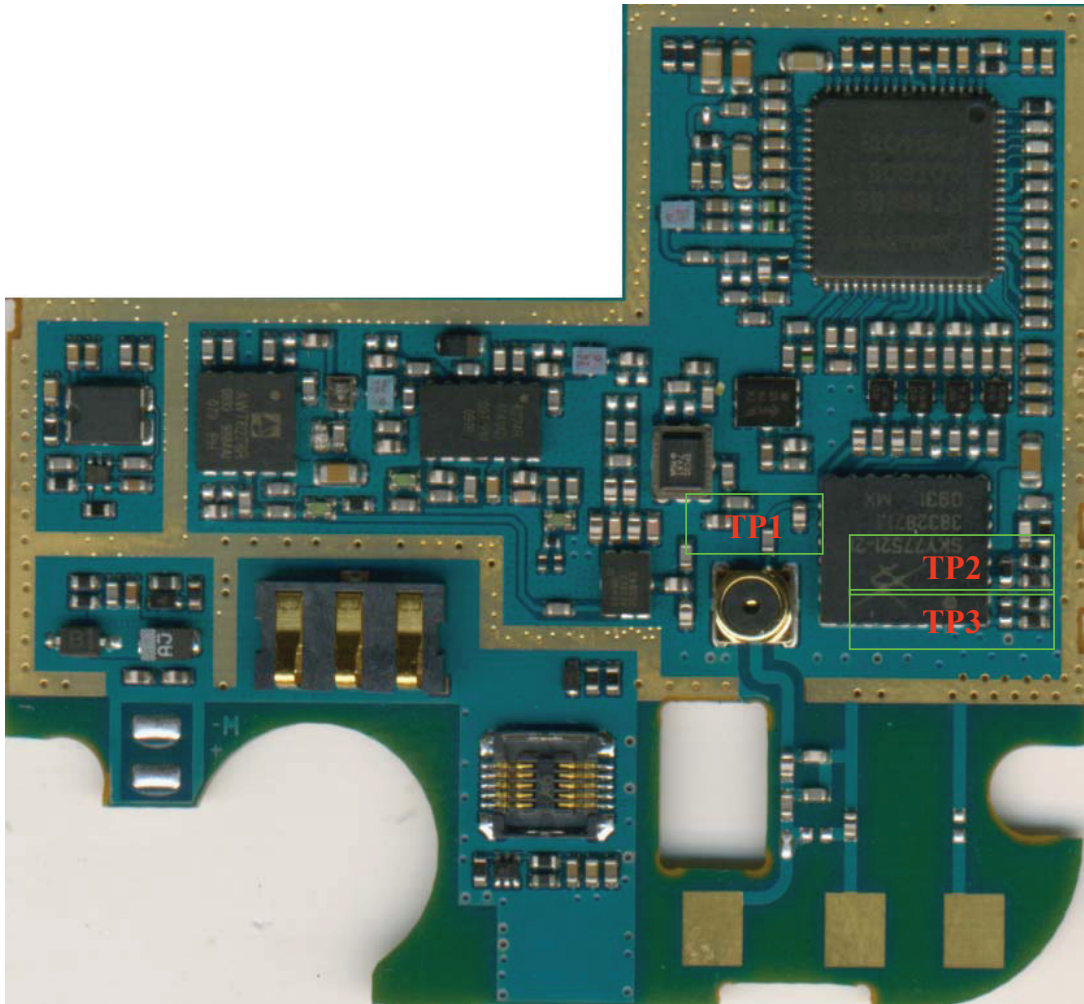
4.6.1. Checking TCXO Block

Refer to 4.3

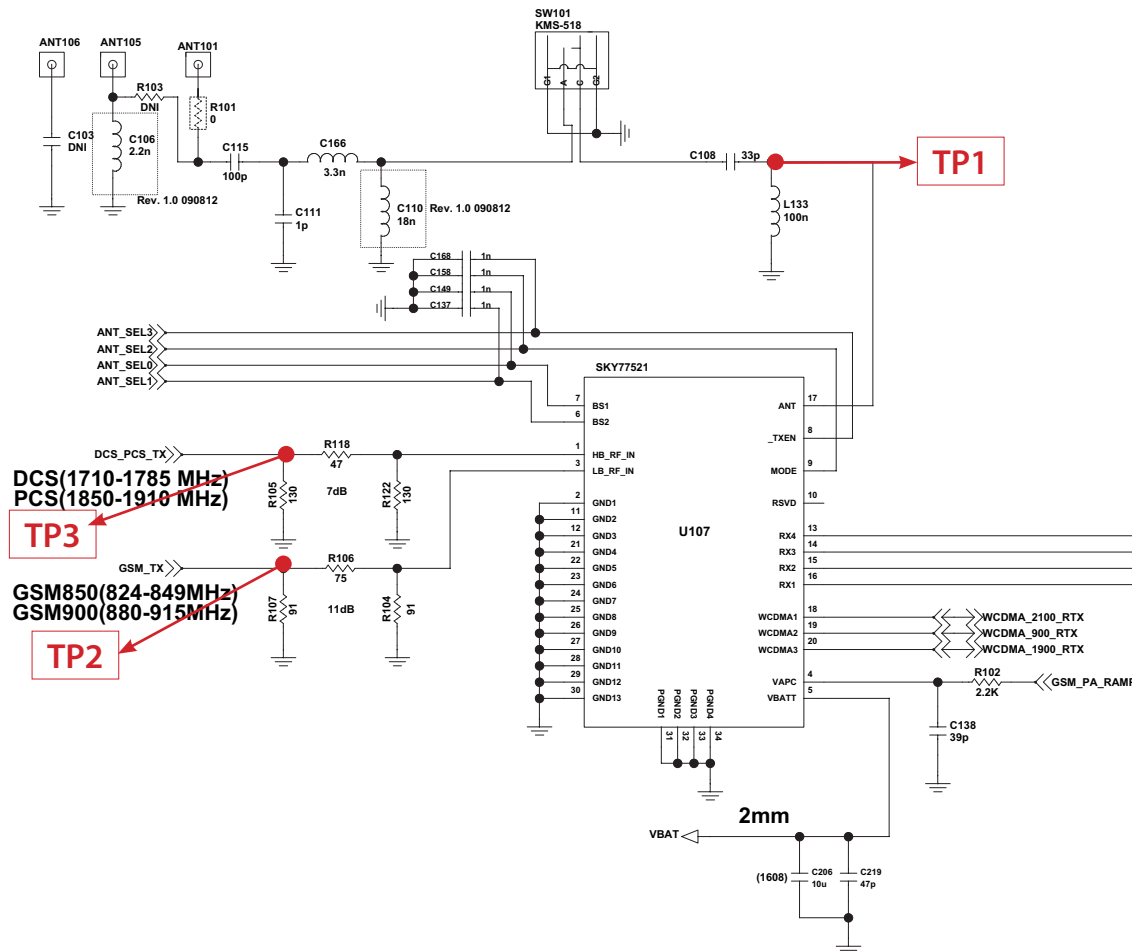
4.6.2. Checking FEM Block

Refer to 4.4

4.6.3.1. Checking RF TX level

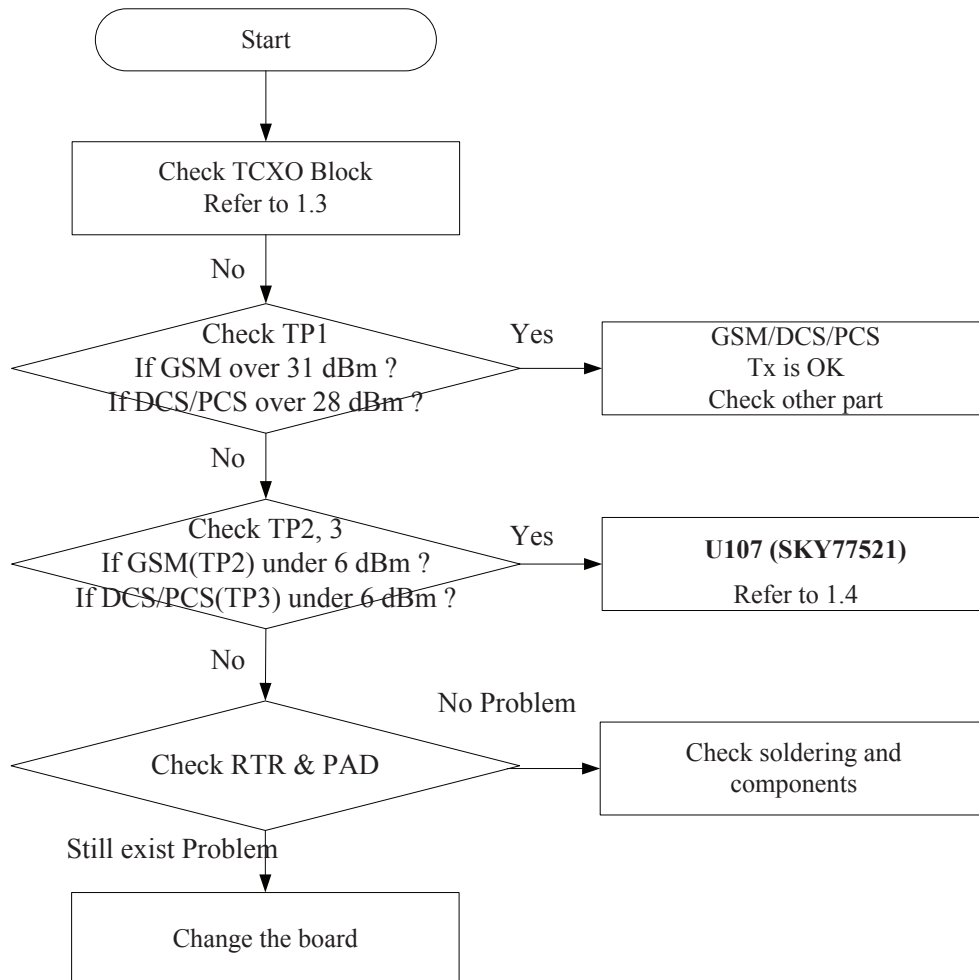


4. TROUBLE SHOOTING

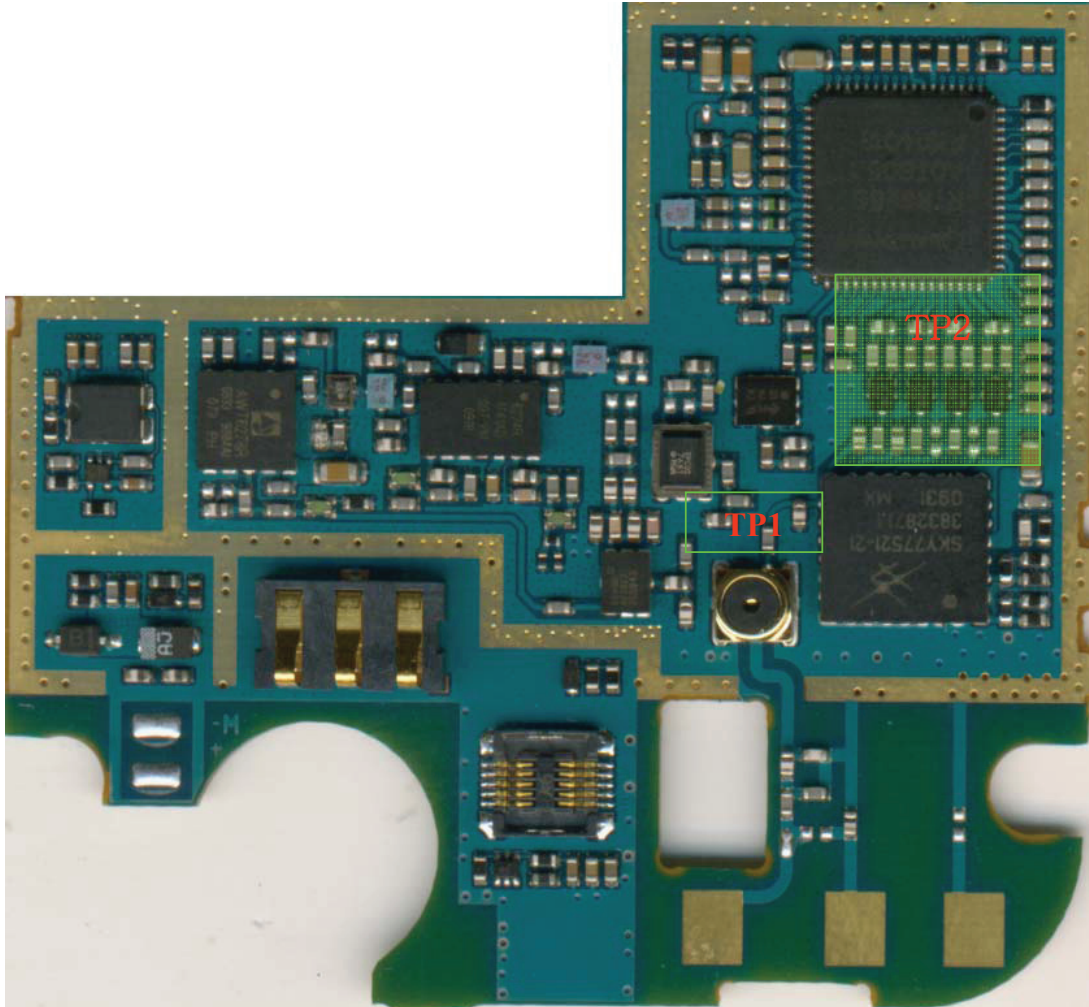


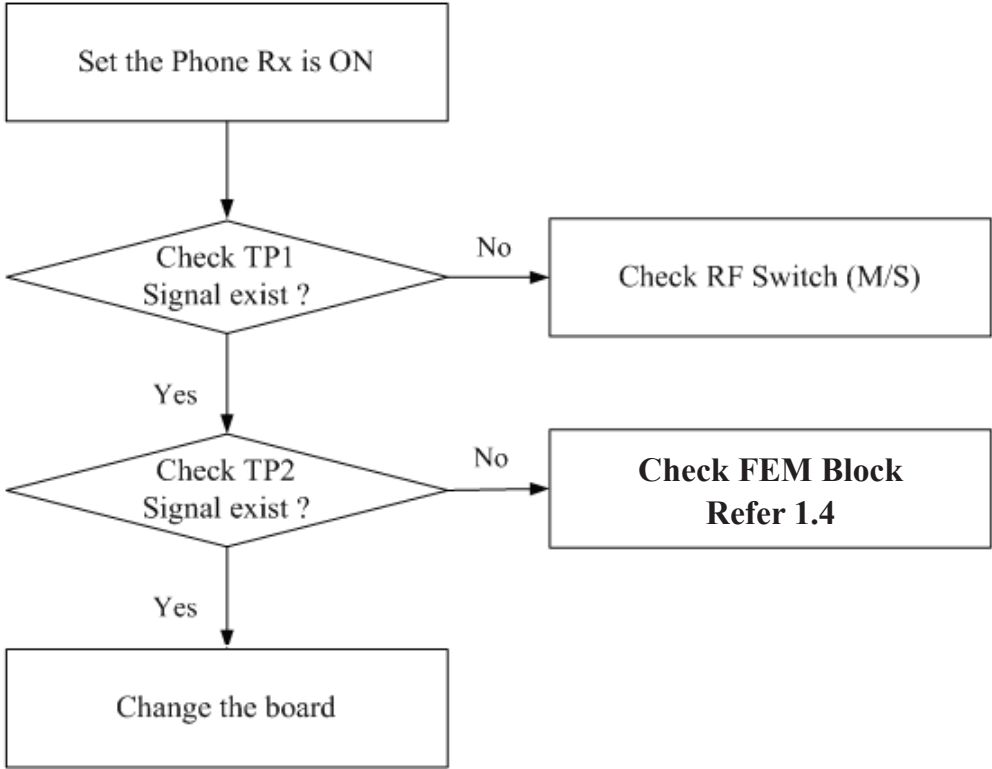
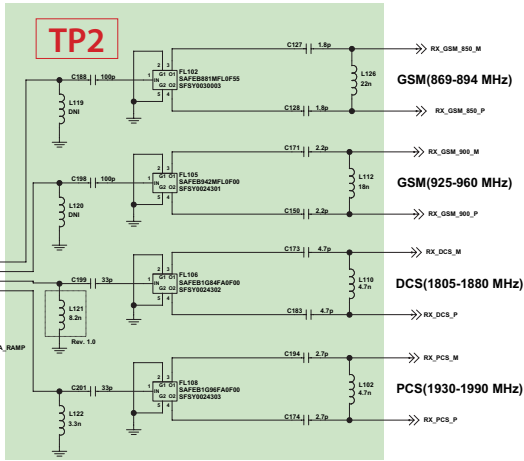
Schematic of GSM/DCS/PCS Tx Block

4. TROUBLE SHOOTING



4.6.3.2. Checking RF Rx Block

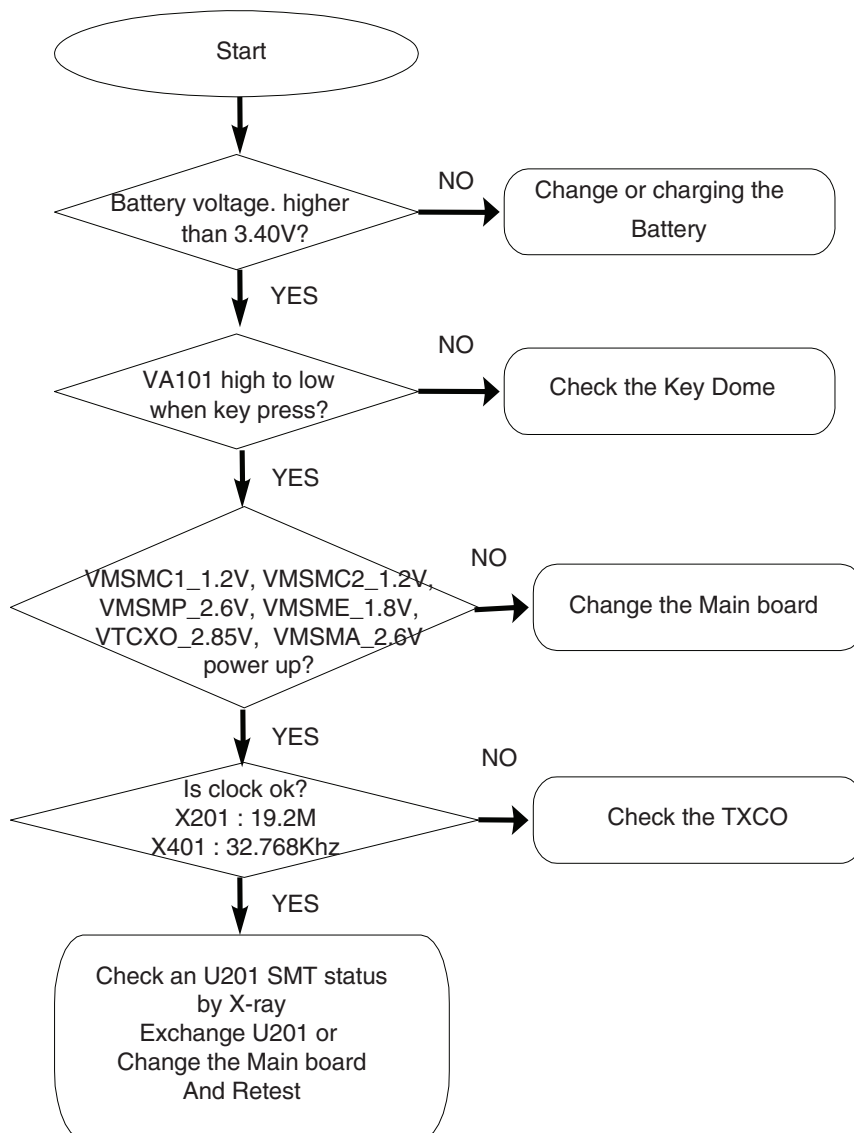




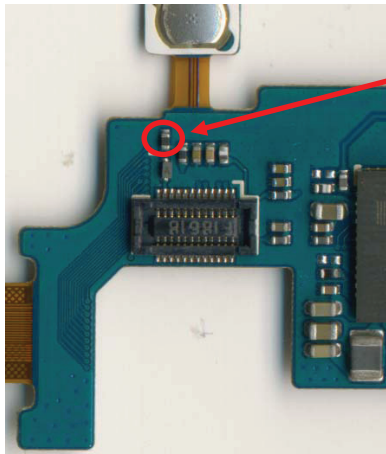
4.7 Power ON Troubleshooting

Power On sequence of GM750 is :

END key press → KPD_PWR_N go to low (SUB / VA101), PM7540 KPDPWR_N pin(C12) → PM7540
 Power Up → VSMC1_1.2V(C421), VSMC2_1.2V(C423), VMSME_1.8V(C418),
 VMSMP_2.6V(C426), VMSMA_2.6V(C407), VTCXO_2.85V(C425) power up and system reset assert
 to MSM → Phone booting and PS_HOLD(D404) assert to PMIC

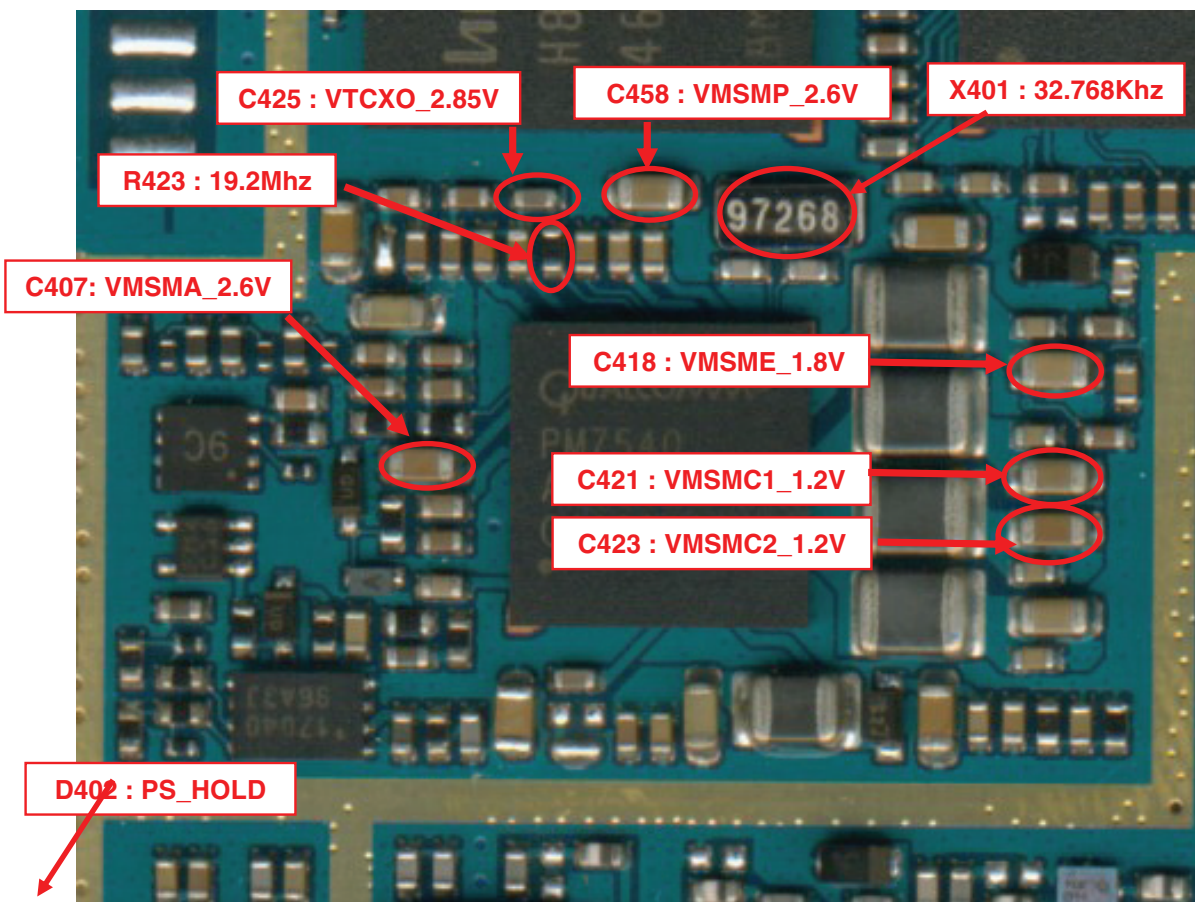


4. TROUBLE SHOOTING



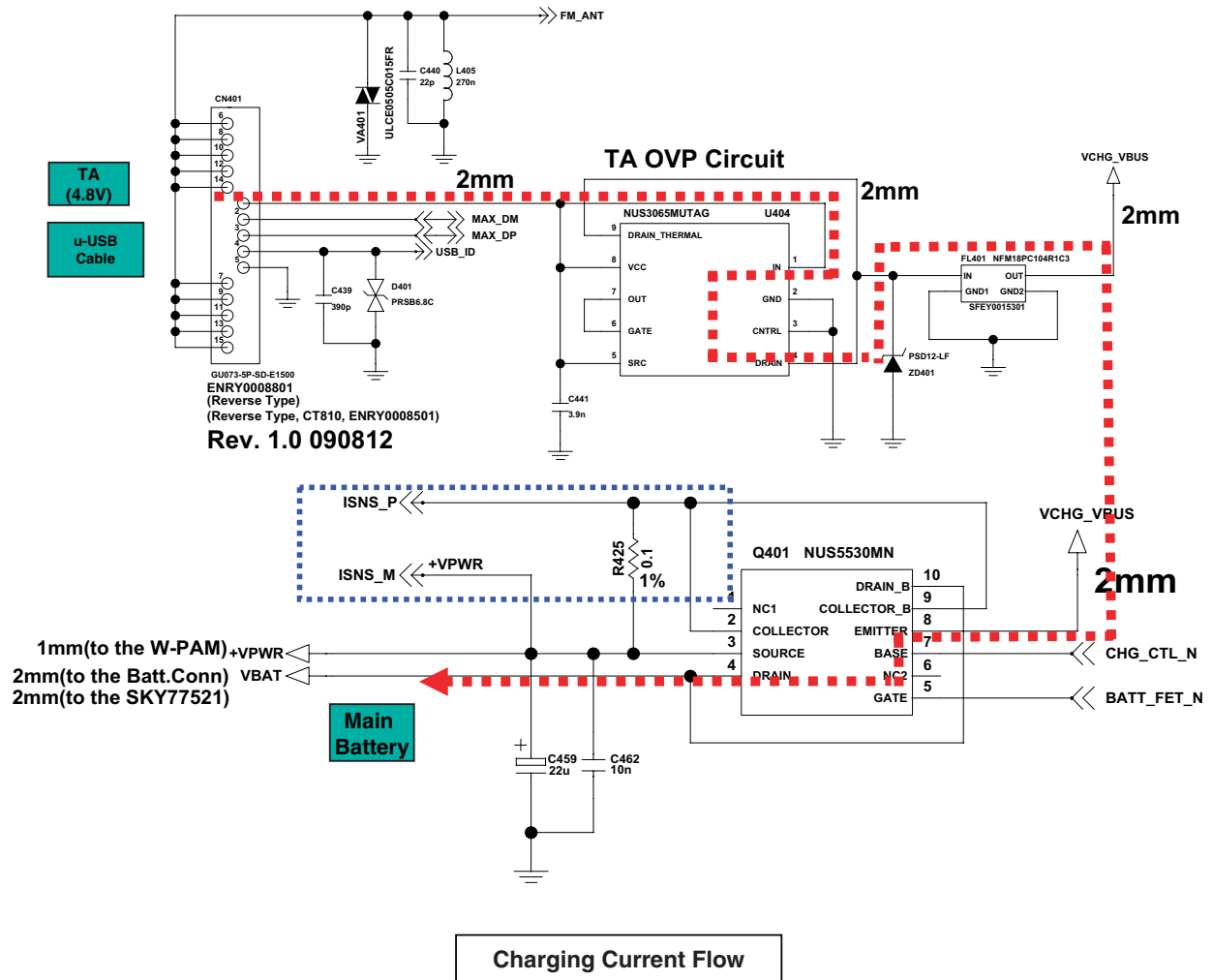
VA202 : KPD_PWR_N go to low

[GM750 SUB PCB Bottom]



[GM750 Main PCB Bottom]

4.8 Charger Troubleshooting



Charging Procedure

- Connect TA or u-USB Cable
- Control the charging current by PM7540 IC
- Charging current flows into the battery

Check Point

- Connection of TA or USB Cable
- Charging current path
- Battery

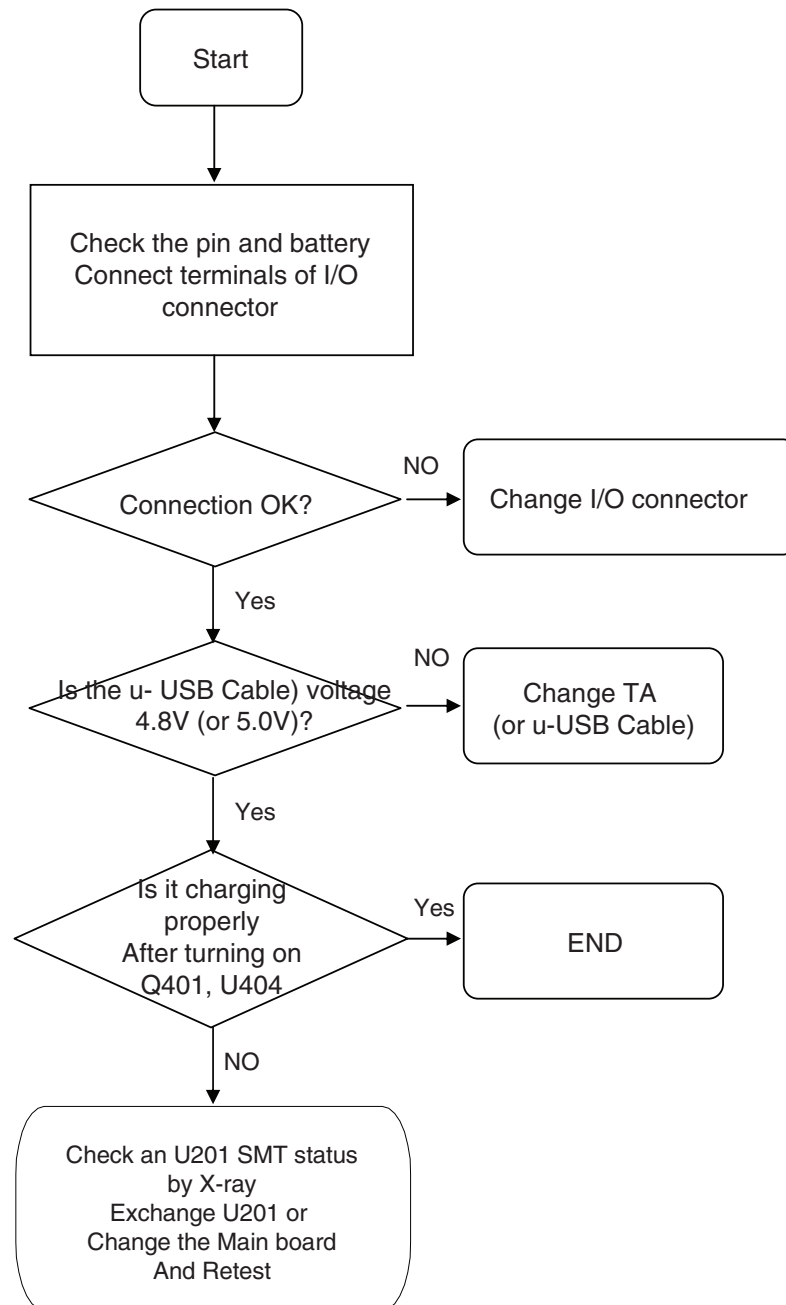
Troubleshooting Setup

- Connect TA and battery to the phone

Troubleshooting Procedure

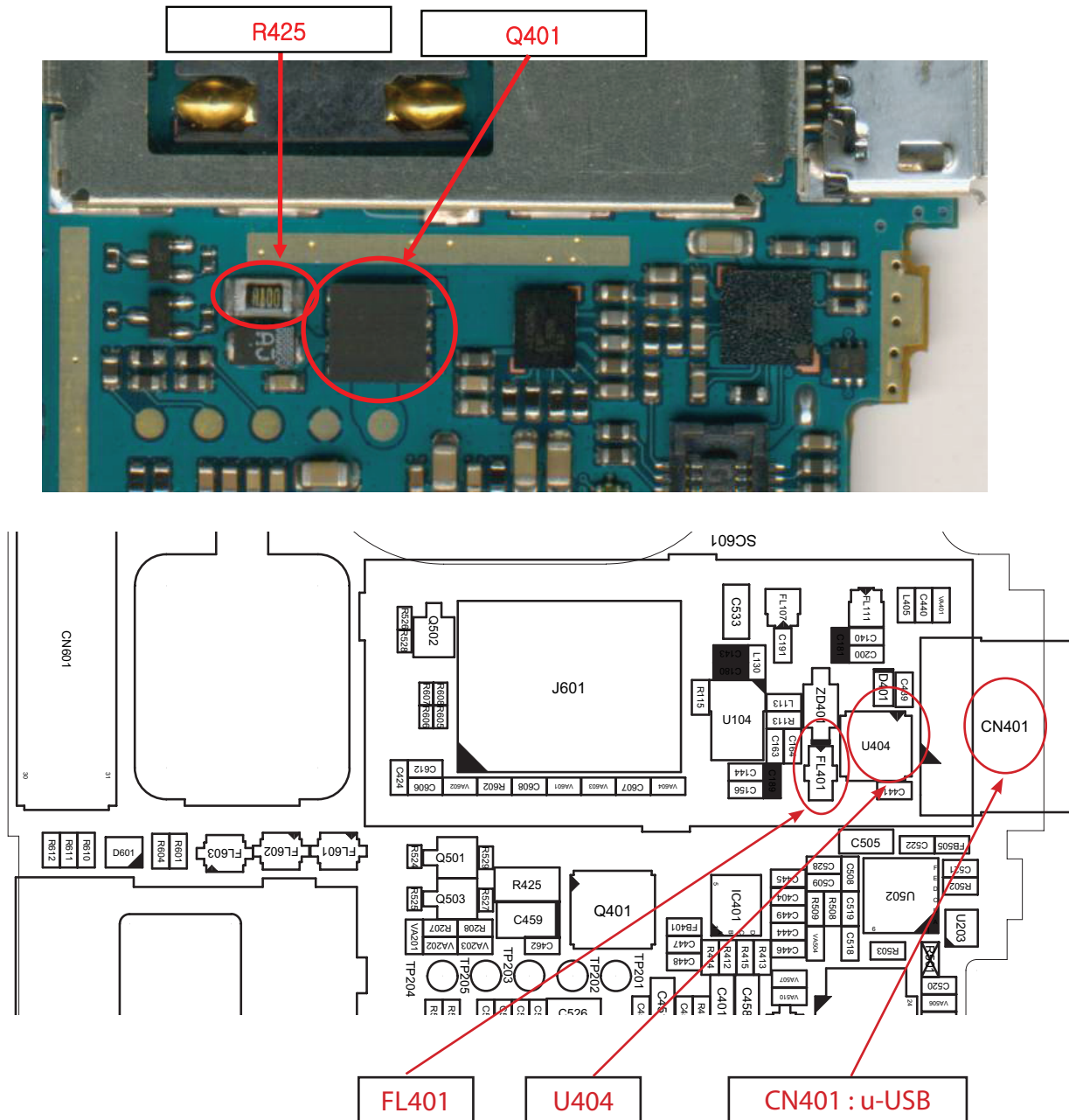
- Check the charger (TA or USB Cable) connector
- Check the OVP Circuit
- Check the charging current Path
- Check the battery

4. TROUBLE SHOOTING



[Charger Troubleshooting Flow]

4. TROUBLE SHOOTING



[Charging part]

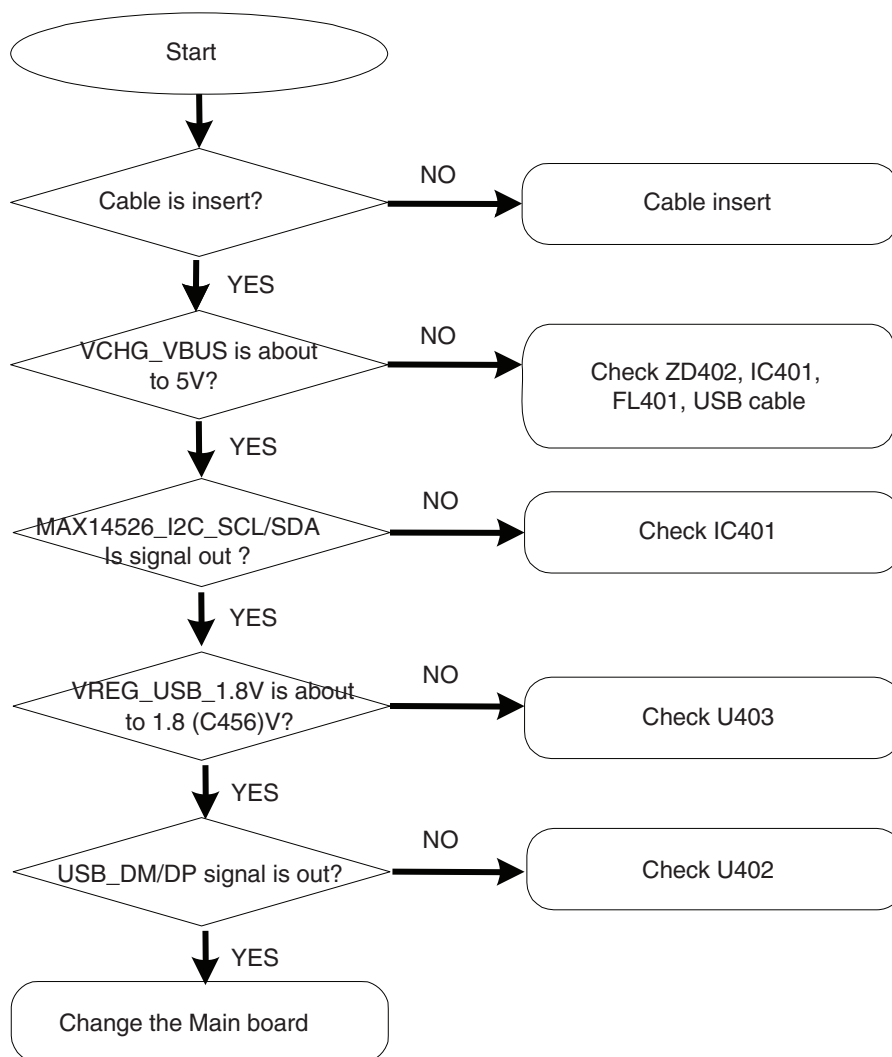
4. TROUBLE SHOOTING

4.9. USB trouble

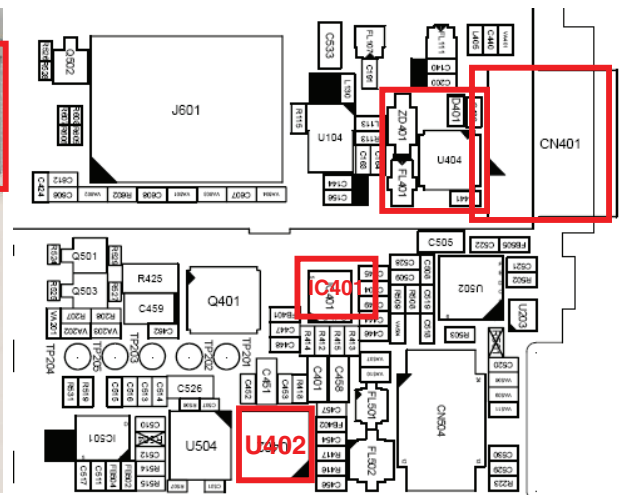
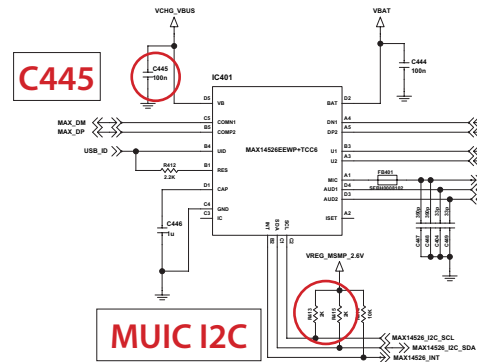
USB Initial sequence of GM750 is :

USB connected to GM750 → VCHG_VBUS(C445) go to 5V

→ VERG_USB_1.8V is about 1.8V → USB_DATA is triggered → USB work



MAX14526



USB to UART

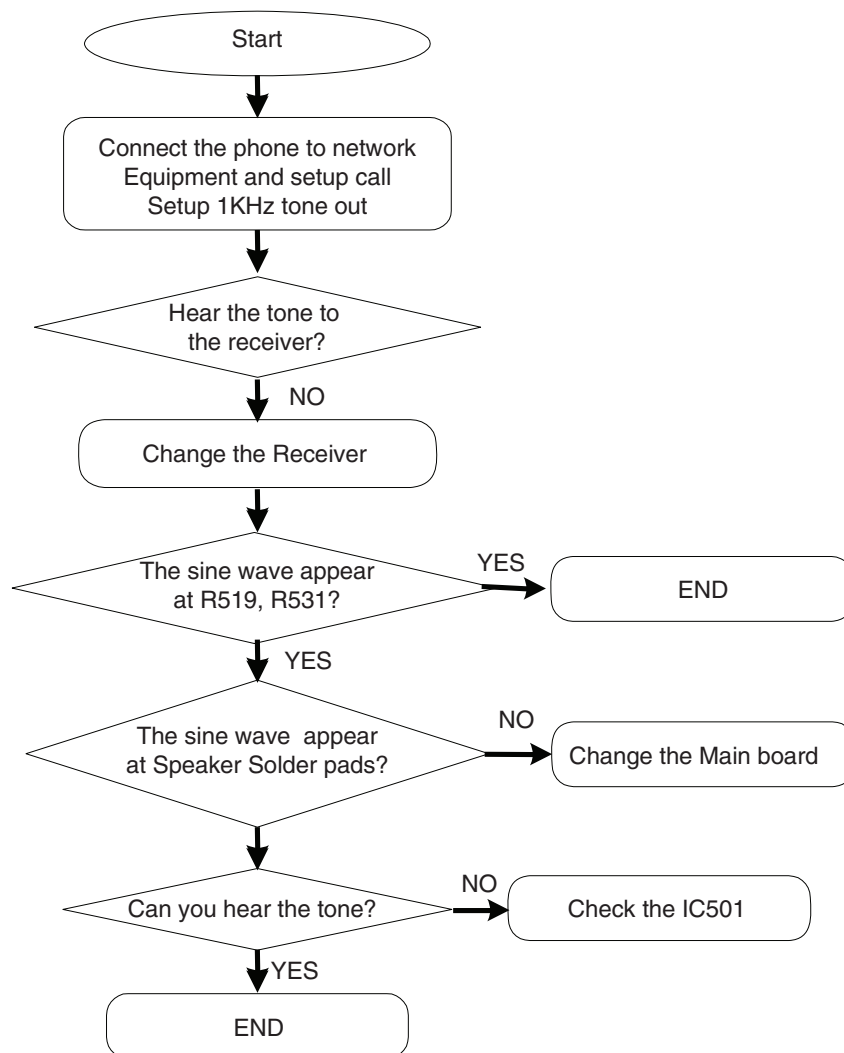
4. TROUBLE SHOOTING

4.10. Audio trouble

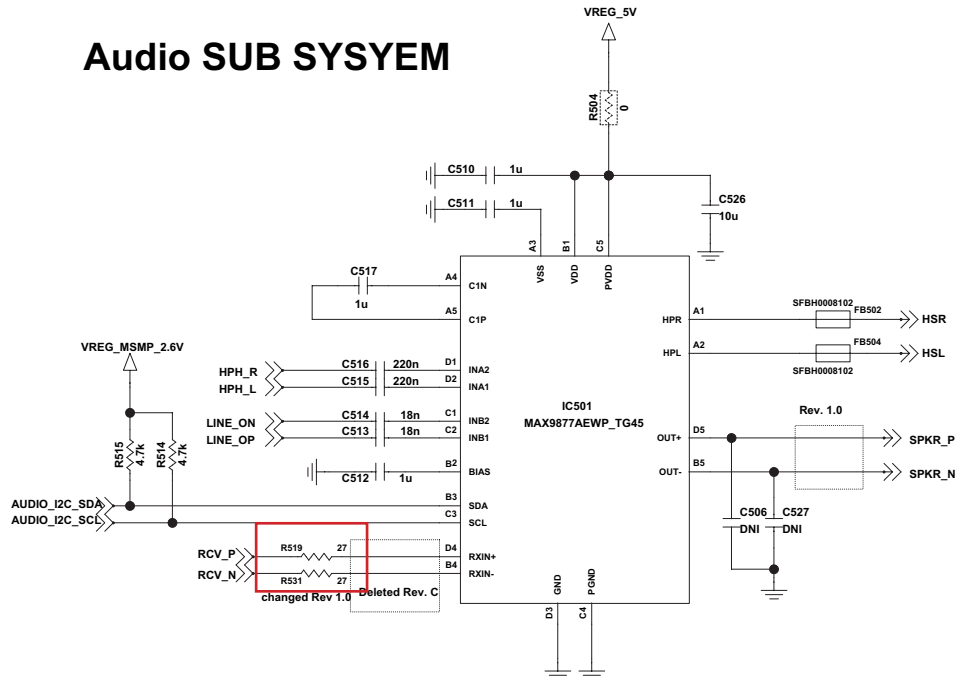
4.10.1. Receiver path

Voice Receiver path as below:

MSM7200A RCV_P, RCV_N → IC501 (Audio Subsystem) → Speaker solder PAD → Speaker

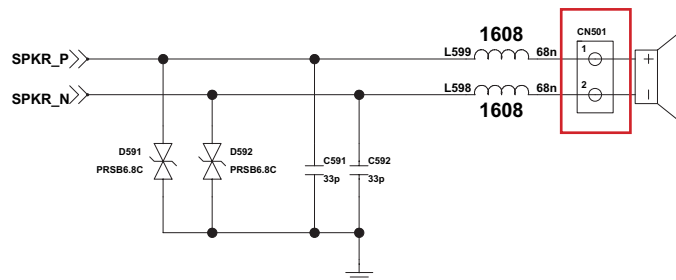


Audio SUB SYSYEM

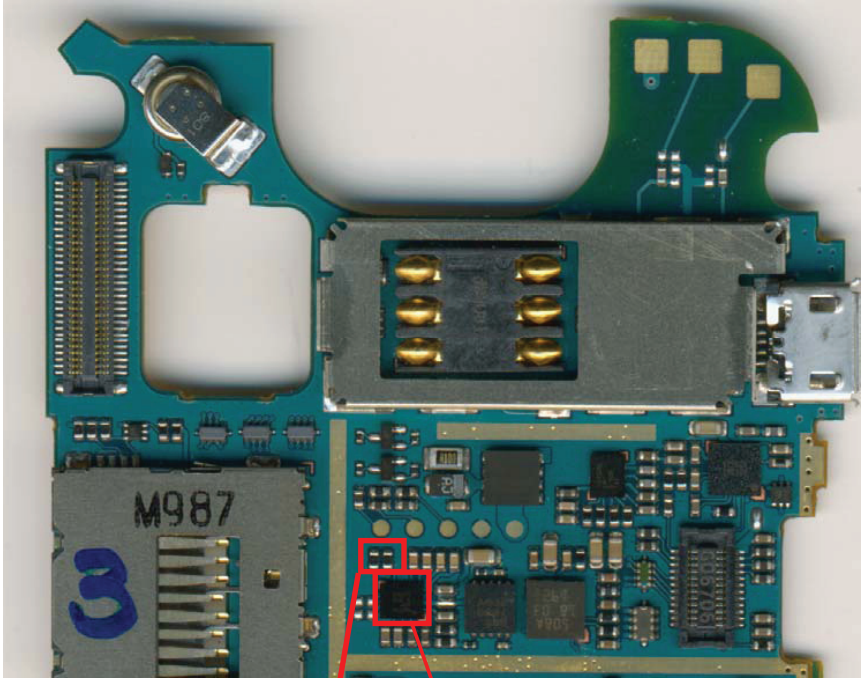


SPEAKER

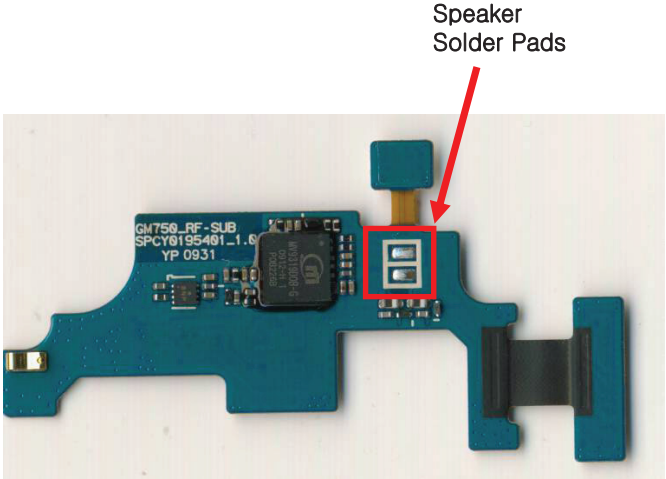
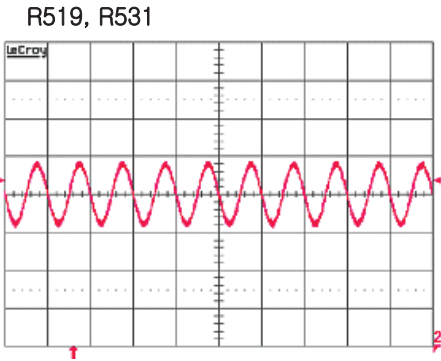
Rev.1.0



4. TROUBLE SHOOTING



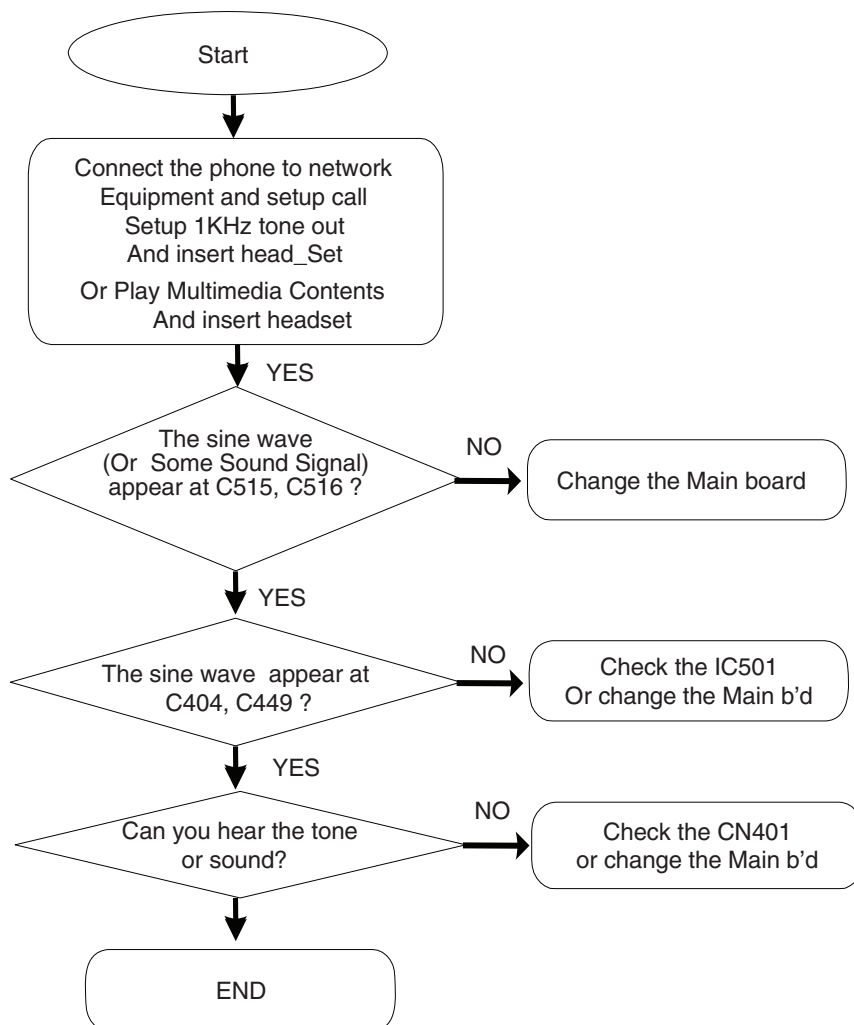
R531,
R519 IC501



4.10.2. Headset path (Voice & Multimedia play)

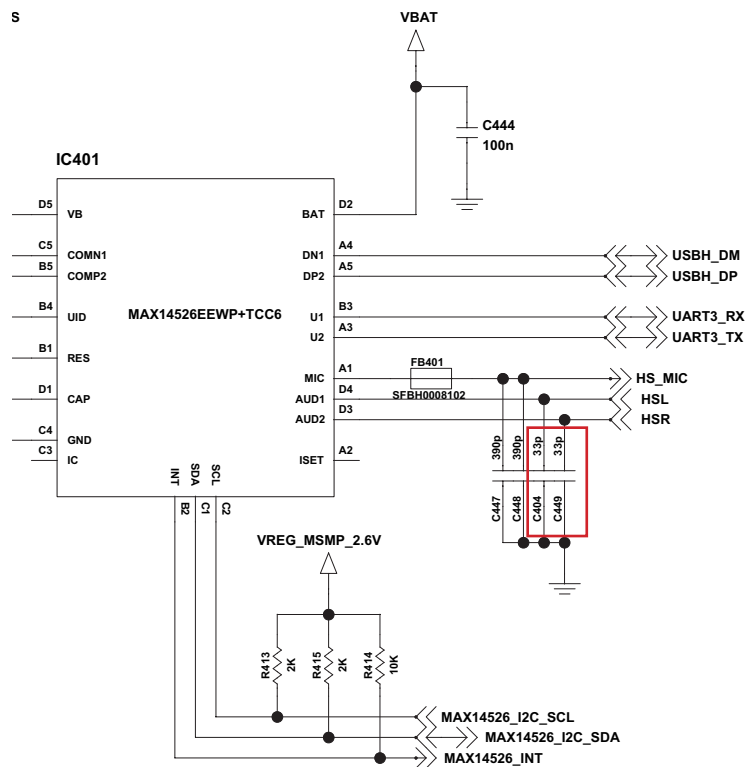
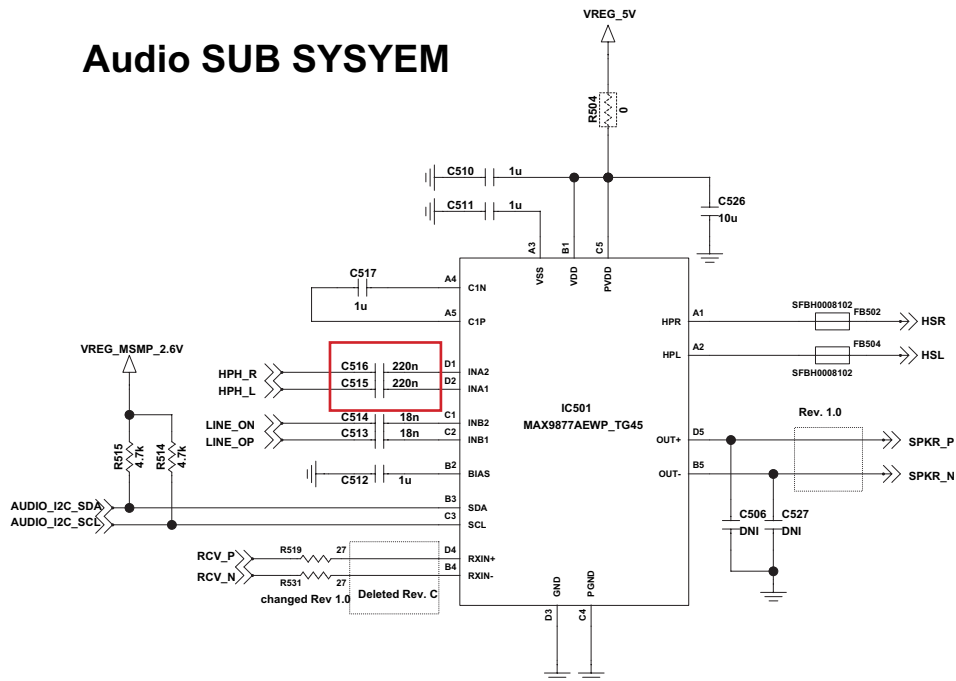
Voice path for Head_Set as below:

MSM7200A HPH_R, HPH_L → C515, C516 → IC501 (Audio Subsystem) → C404, C449 → #2, #3 pin of CN401 u-USB connector

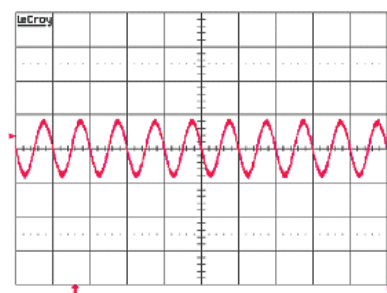
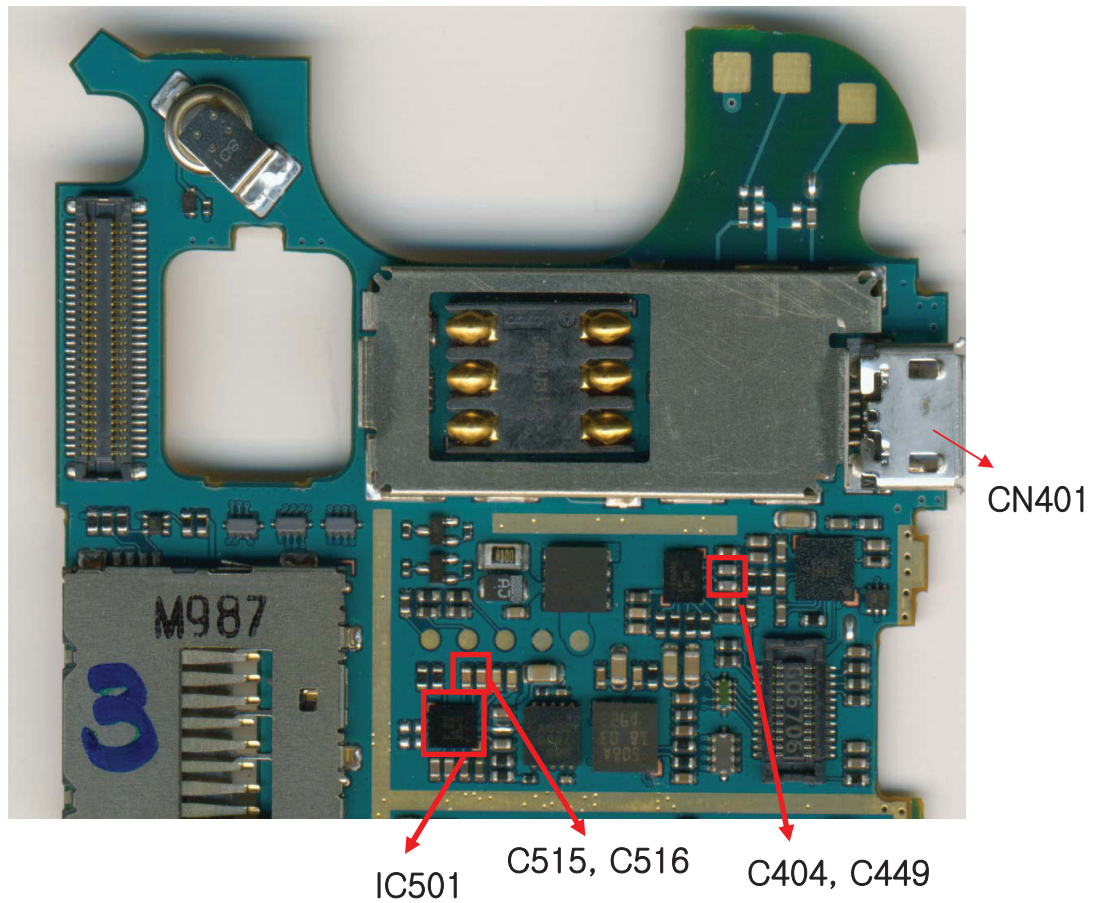


4. TROUBLE SHOOTING

Audio SUB SYSYEM



4. TROUBLE SHOOTING



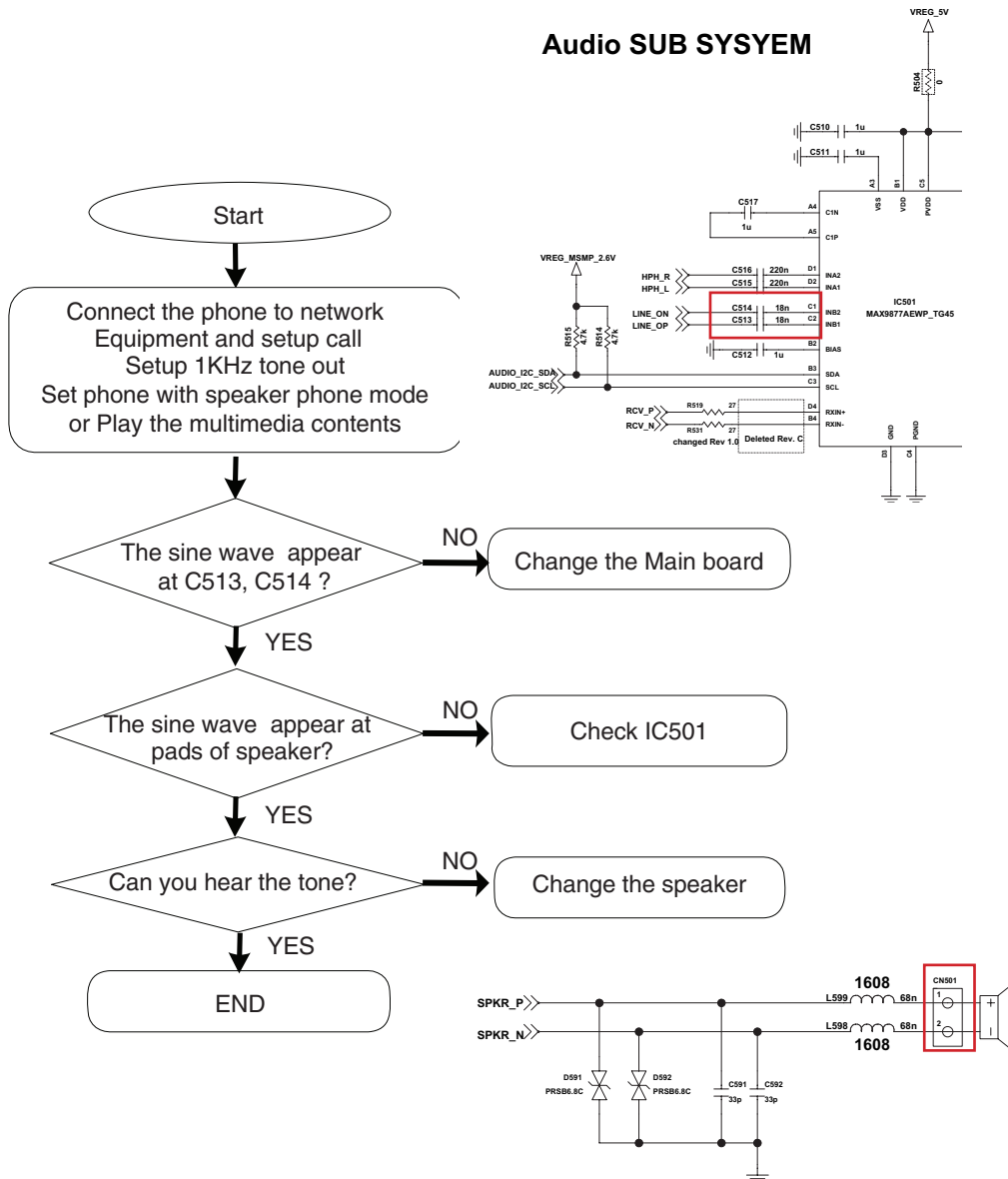
C515, C516 output
C404, C449 output

4. TROUBLE SHOOTING

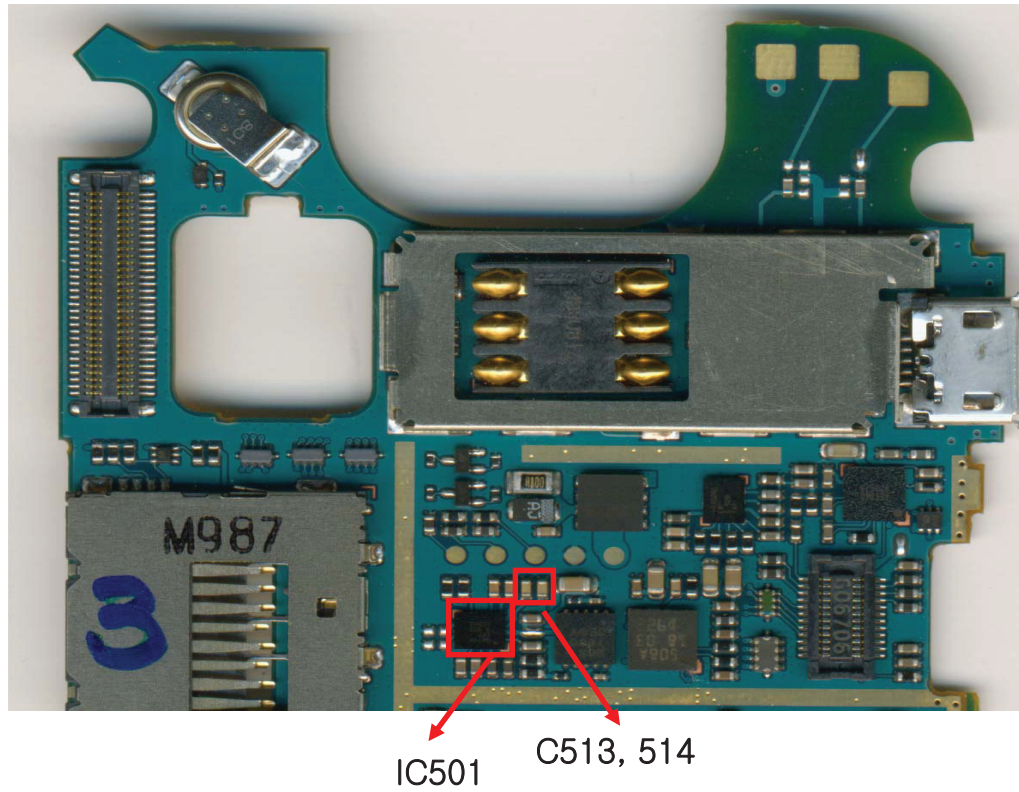
4.10.3. Loud speaker path (voice speaker phone, Multimedia play)

Loud speaker path as below:

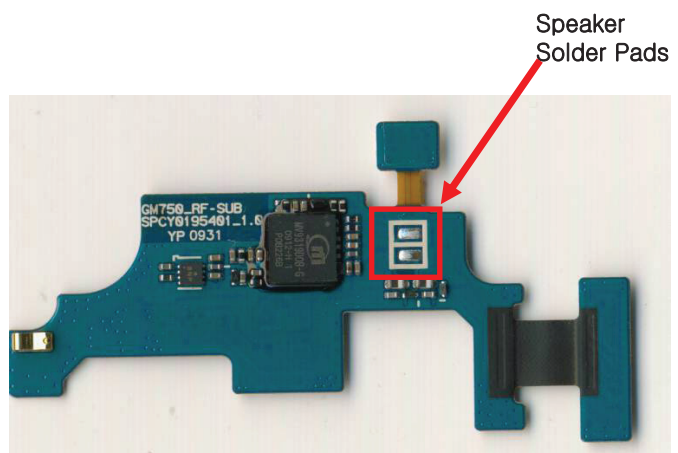
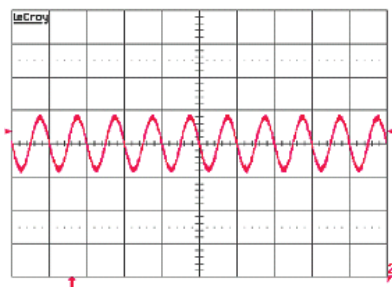
MSM7200A Line_OP,ON → C513, C514 → IC501 (Audio Subsystem) → speaker PAD



4. TROUBLE SHOOTING



C513, C514 output

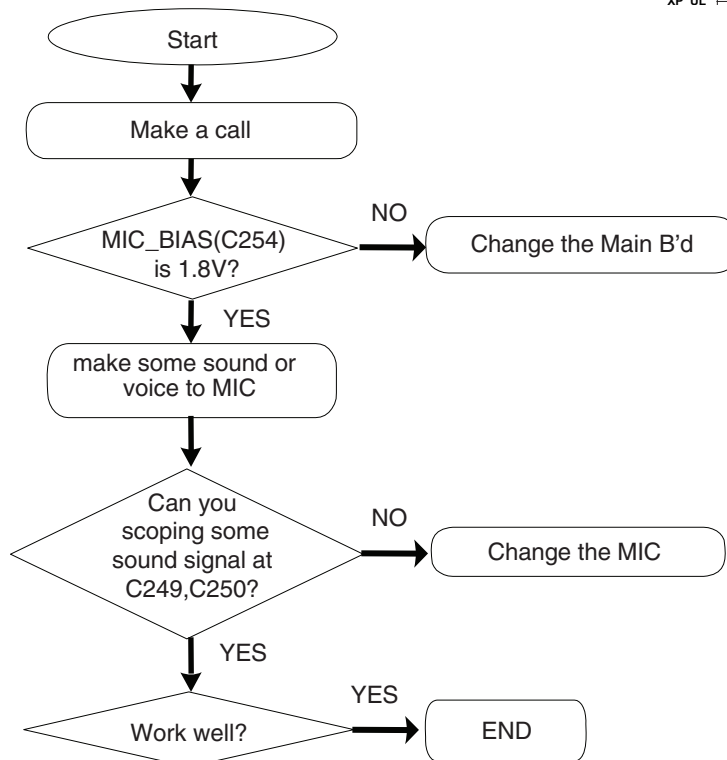
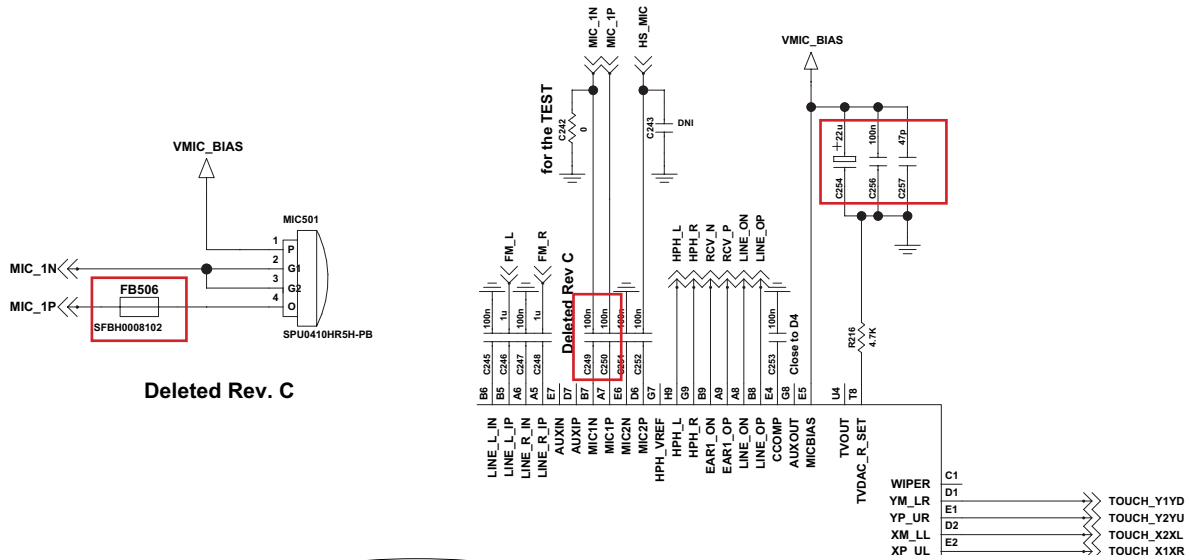


4. TROUBLE SHOOTING

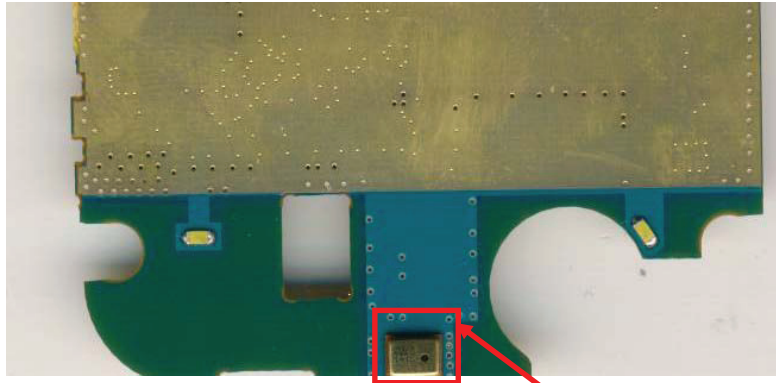
4.10.4. Microphone for main MIC

Main Microphone path as below:

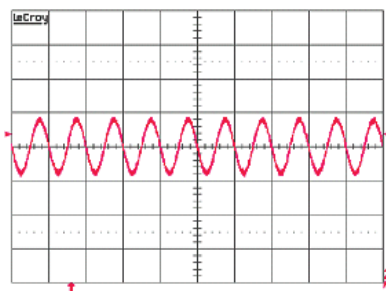
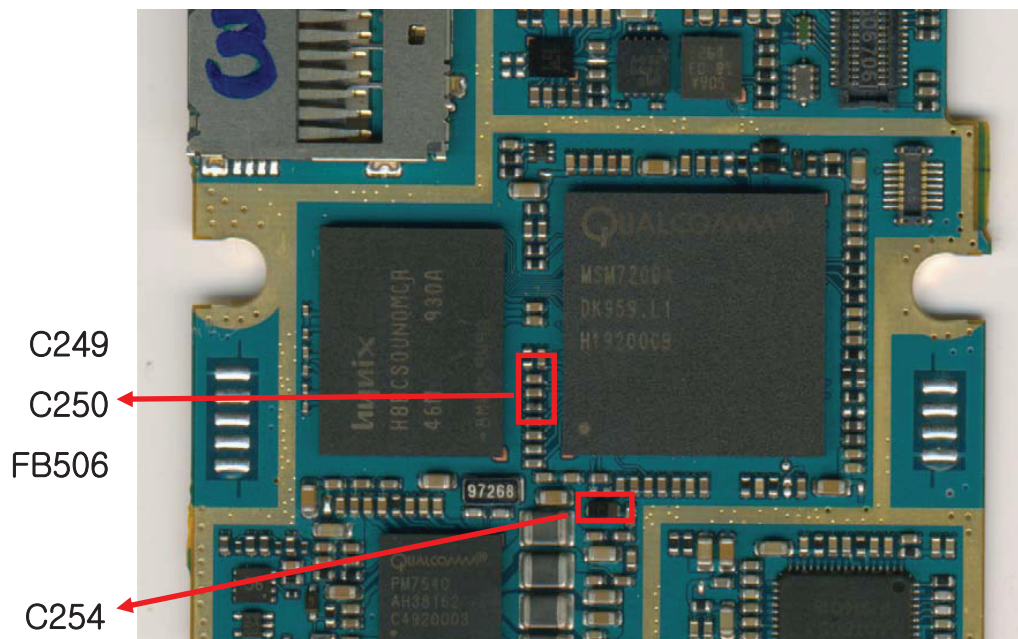
MIC → FB506 → C249,C250 → MSM7200A



4. TROUBLE SHOOTING



Main MIC (MIC501)



In case input the 1kHz tone
to MIC C249, C250

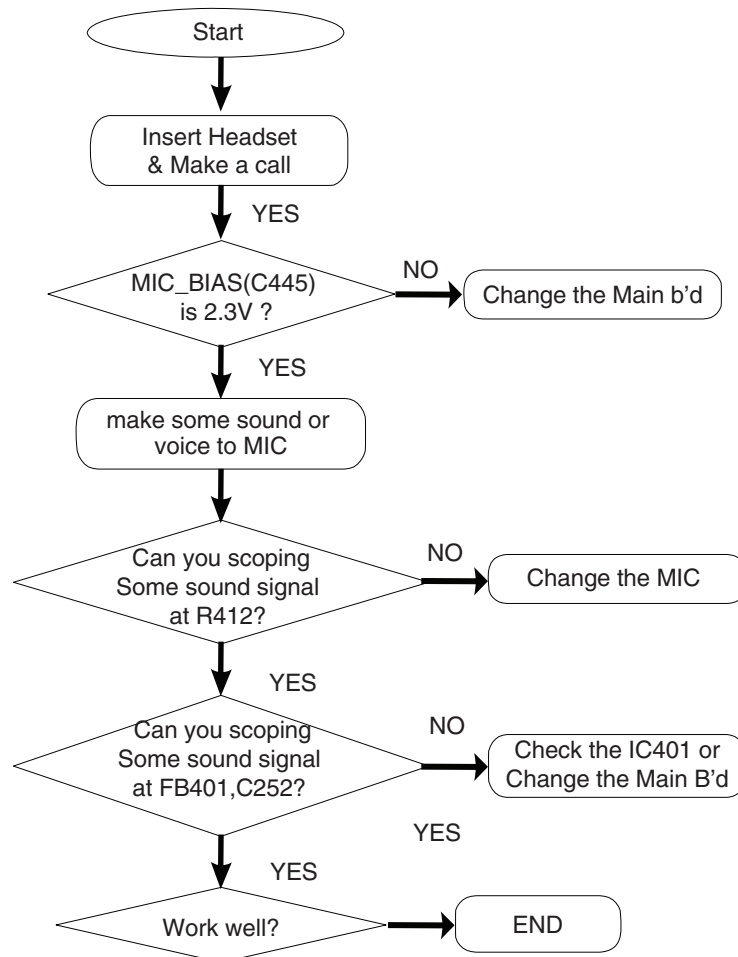
MIC for Head_Set path as below:

→ MAX14526 B1 (RES) : 2.3V(MIC BIAS) → MIC signal → MSM7200A

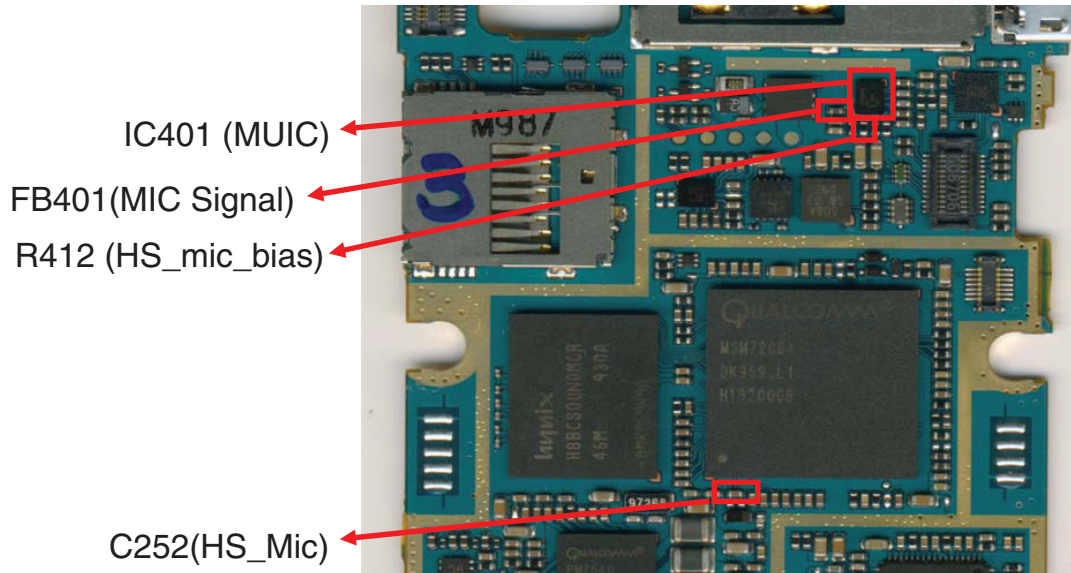


MAX14526

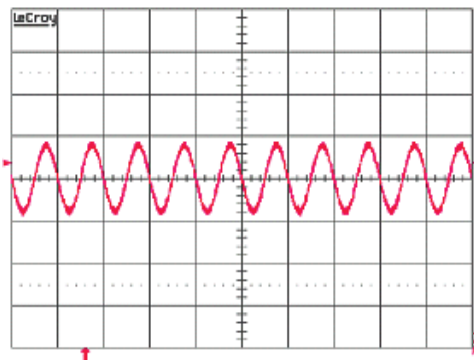




4. TROUBLE SHOOTING

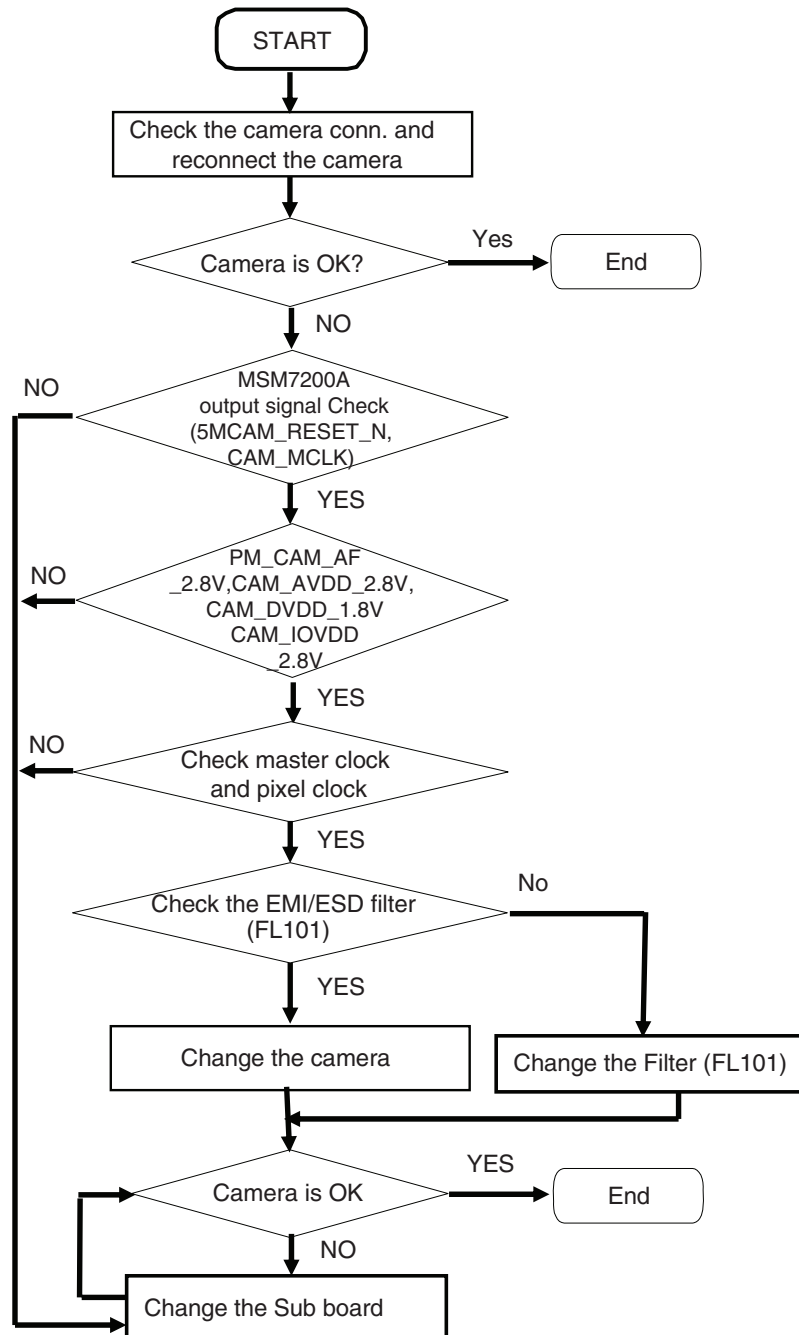


In case input the 1kHz tone to
MIC C252

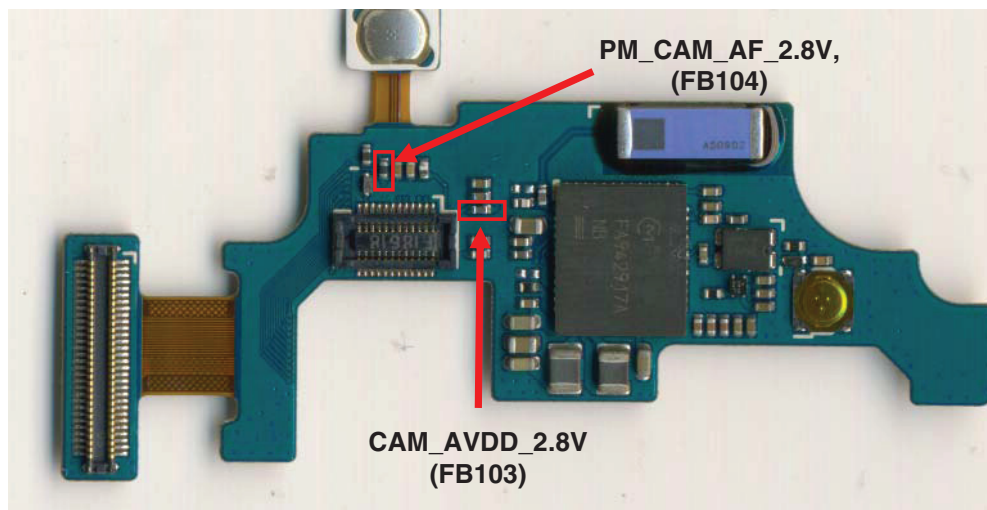
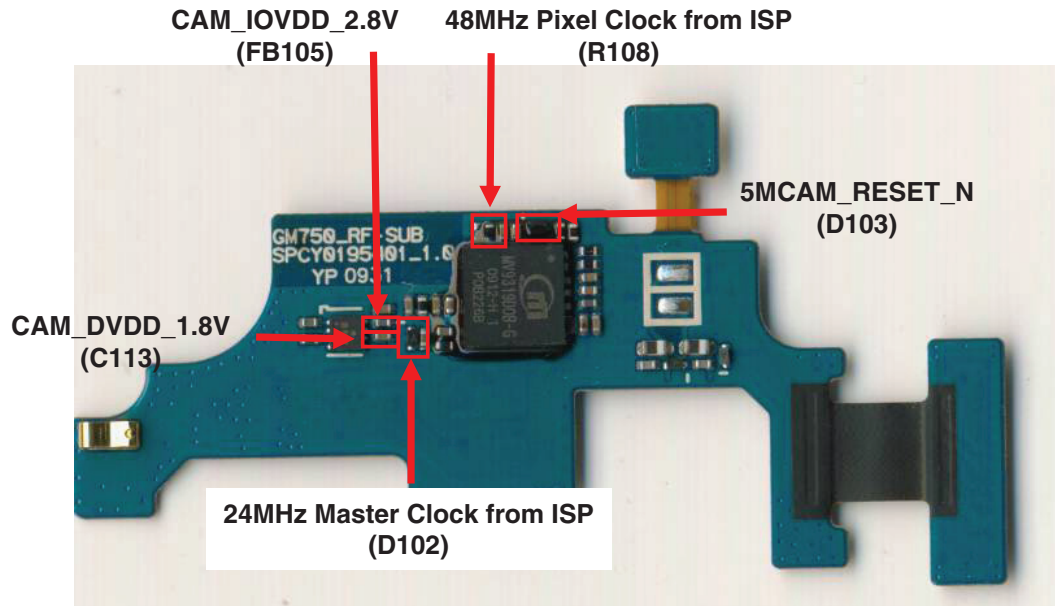


4.11 5M Camera trouble

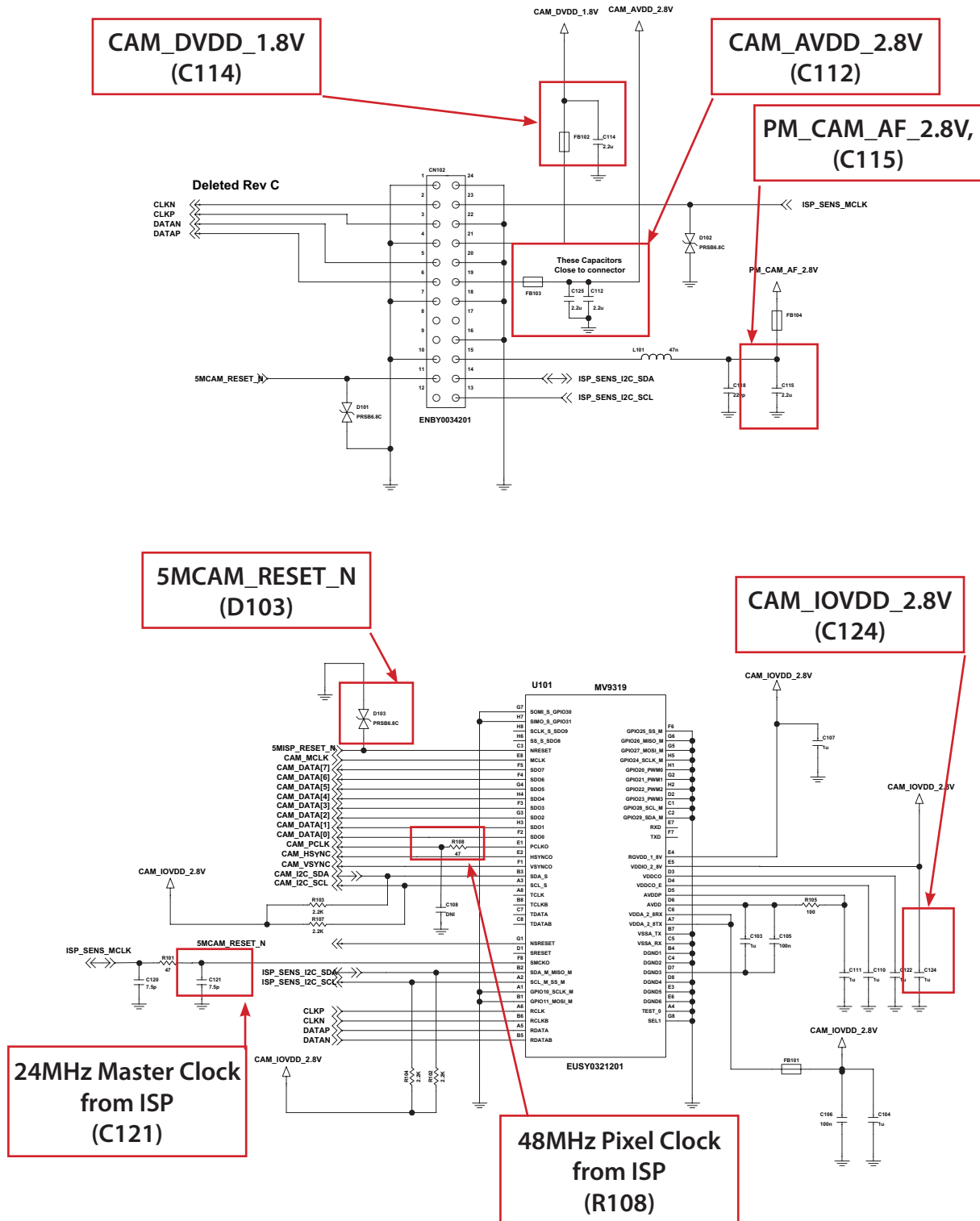
5M camera control signals are generated by MV9319 and MSM7200A.



4. TROUBLE SHOOTING



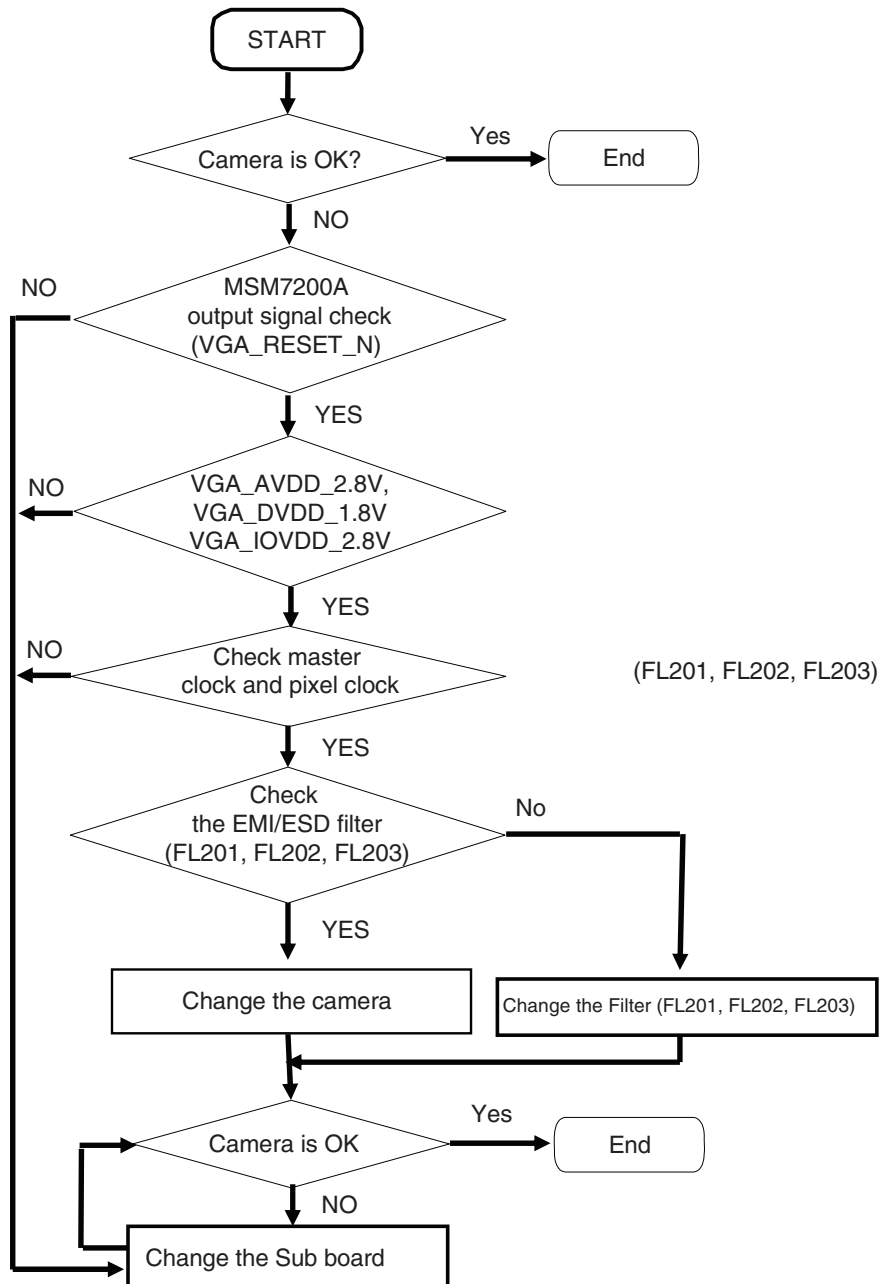
4. TROUBLE SHOOTING



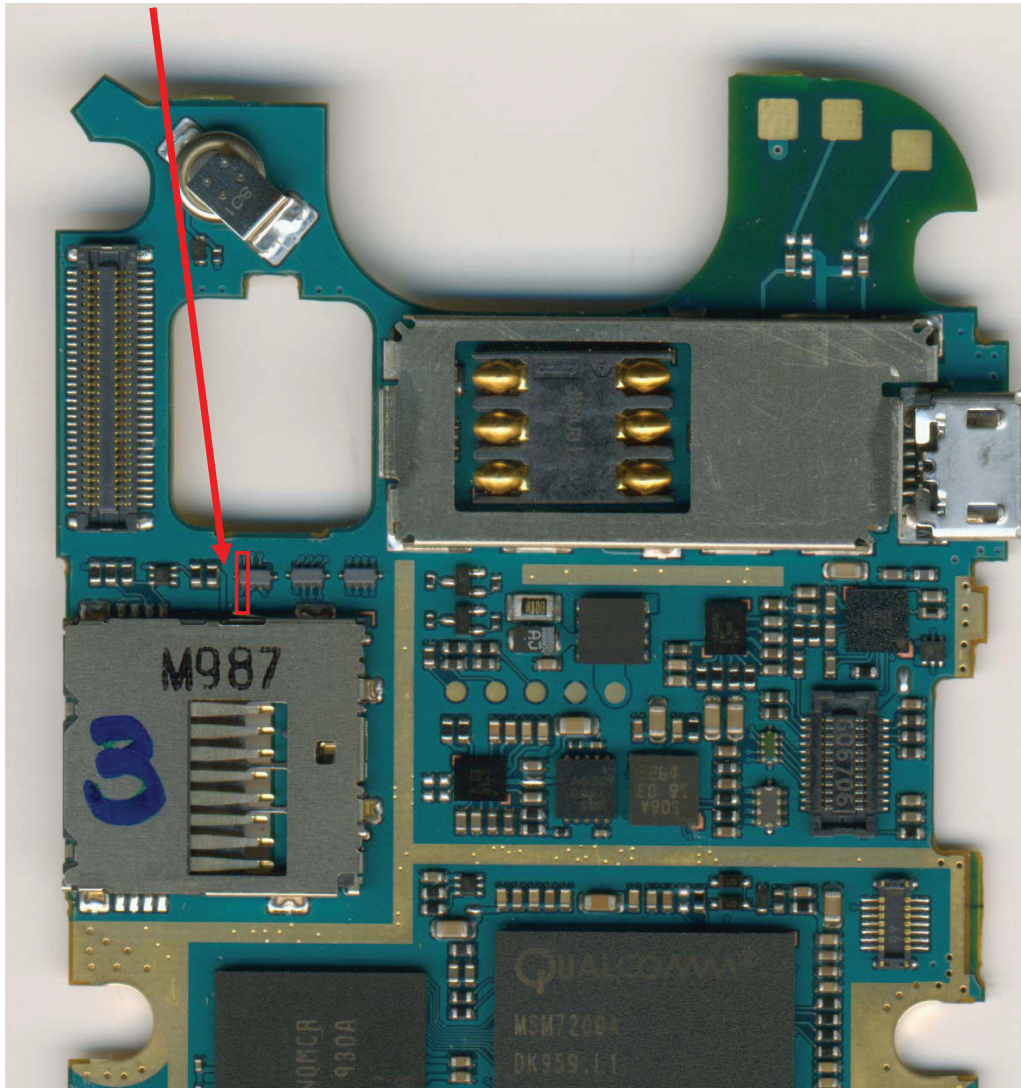
4. TROUBLE SHOOTING

4. 12. VGA Camera trouble

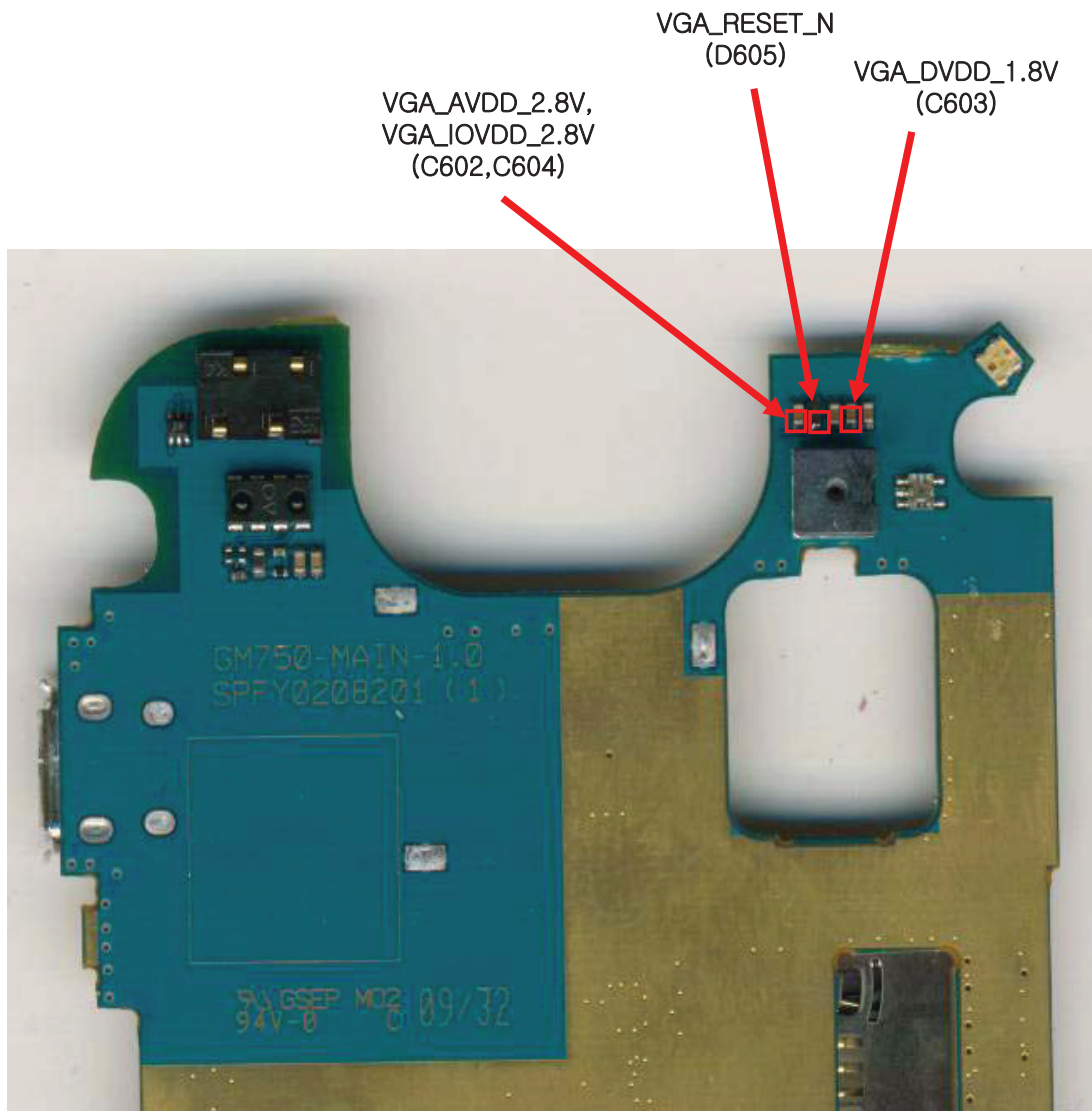
VGA camera control signals are generated by MSM7200A.



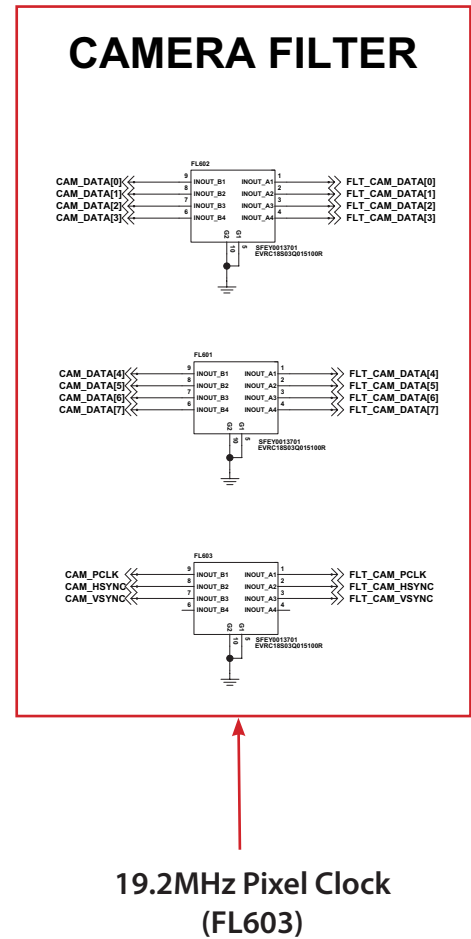
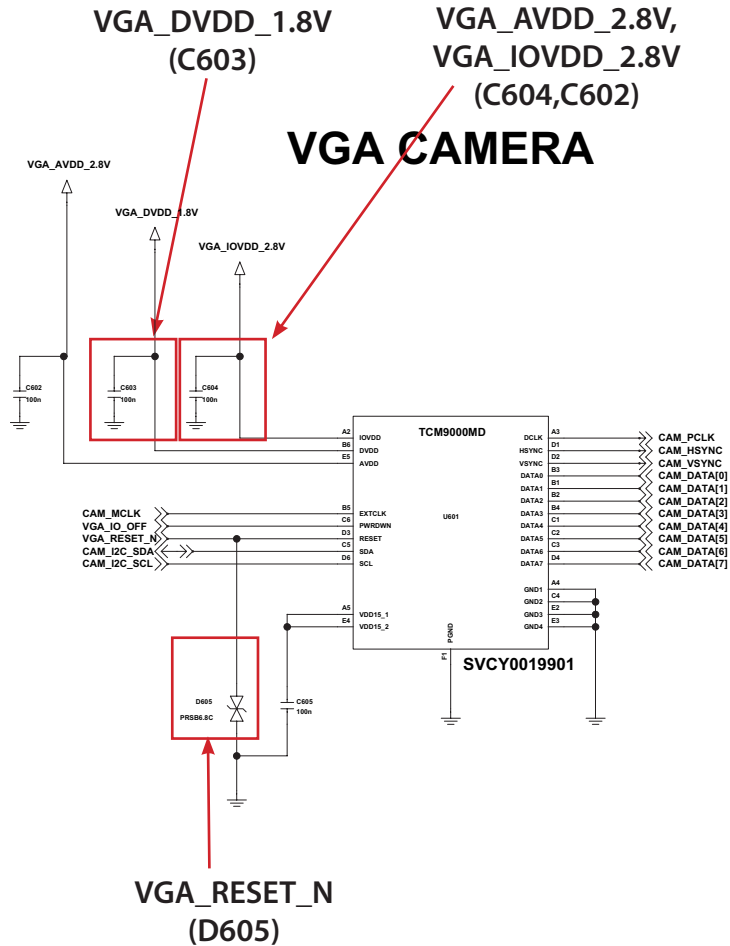
19.2MHz Pixel Clock
(FL603)



4. TROUBLE SHOOTING



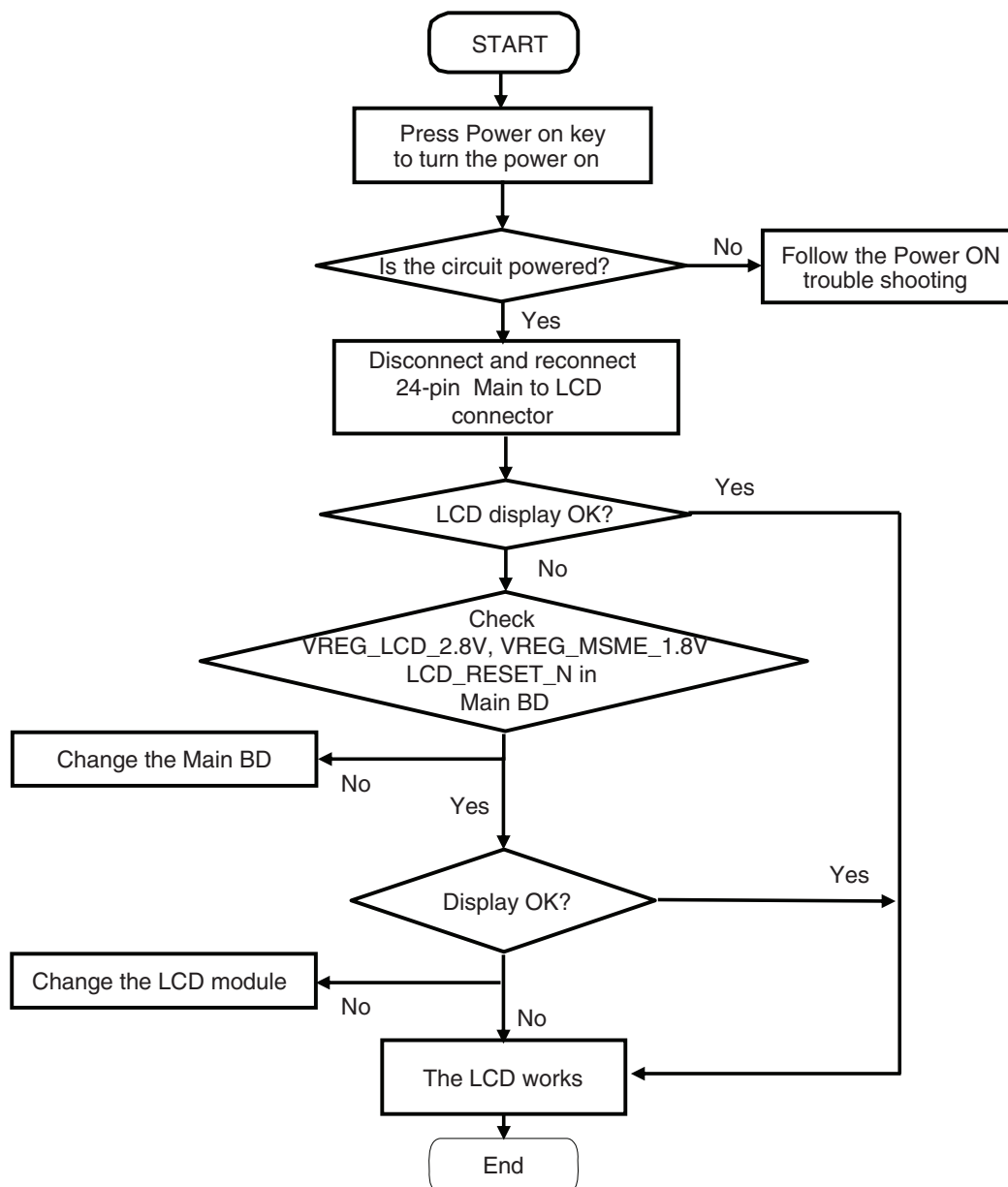
4. TROUBLE SHOOTING



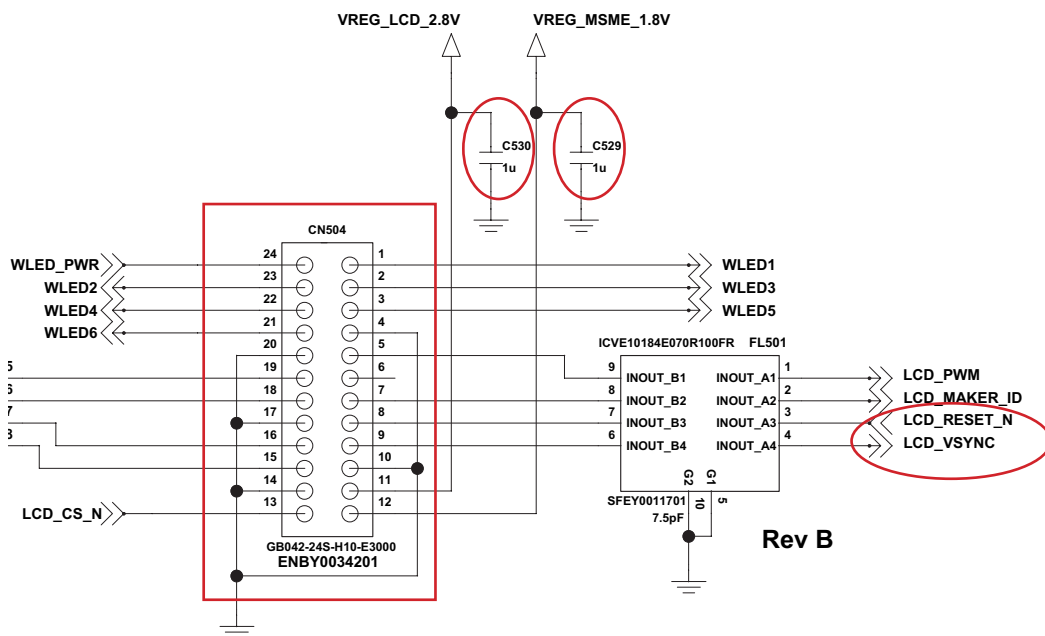
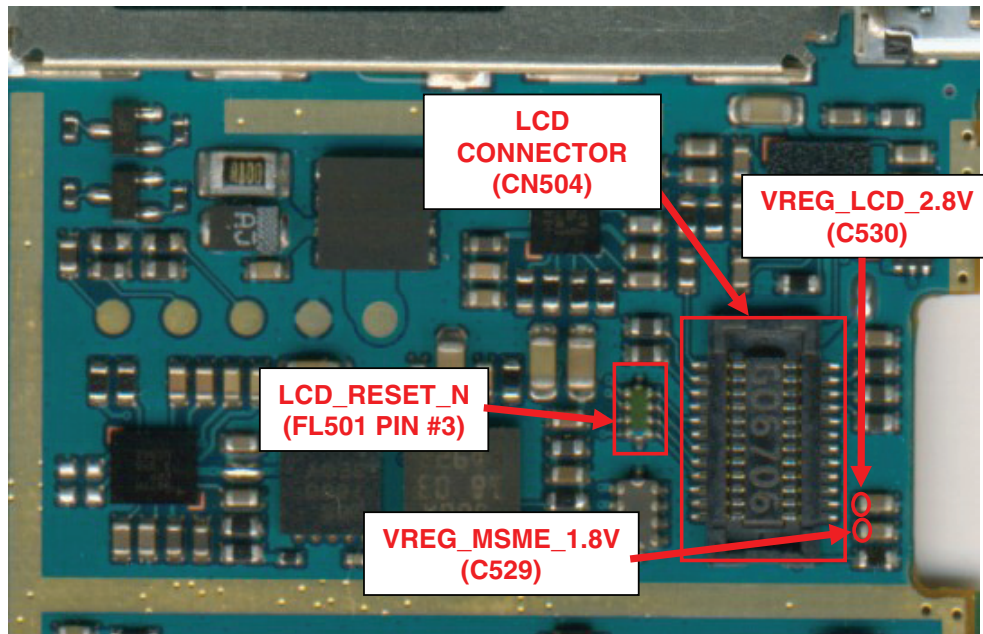
4. TROUBLE SHOOTING

4.13 Main LCD trouble

Main LCD control signals are generated by MSM7200A. Those signal's path are :
MSM7200A → 24-pin LCD connector → LCD Module



4. TROUBLE SHOOTING

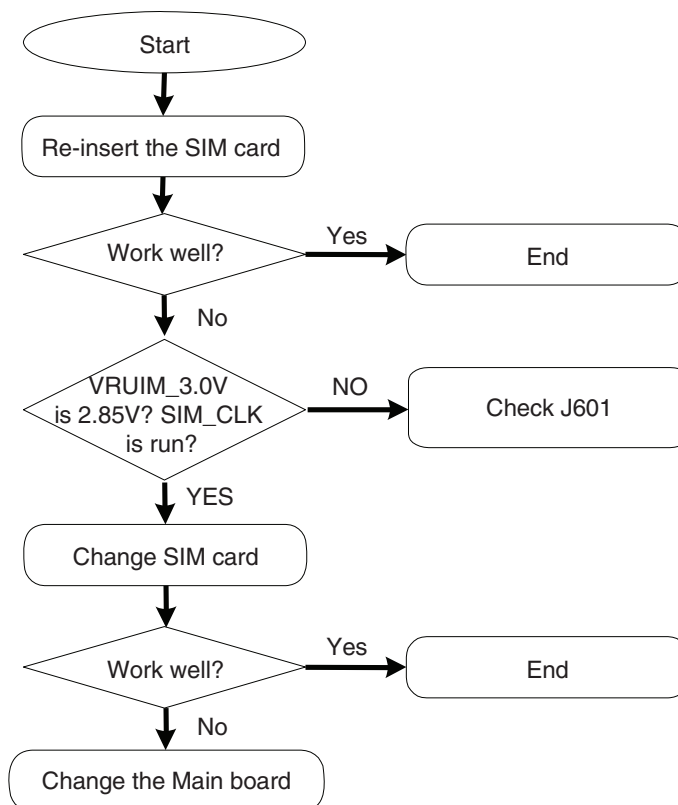


4. TROUBLE SHOOTING

4.14 SIM Detect Troubleshooting

USIM Initial sequence of GM750 is :

SIM_CLK,SIM_RST,SIM_IO triggered → VRUIM_3.0V go to 2.8V → SIM IF work



4. TROUBLE SHOOTING

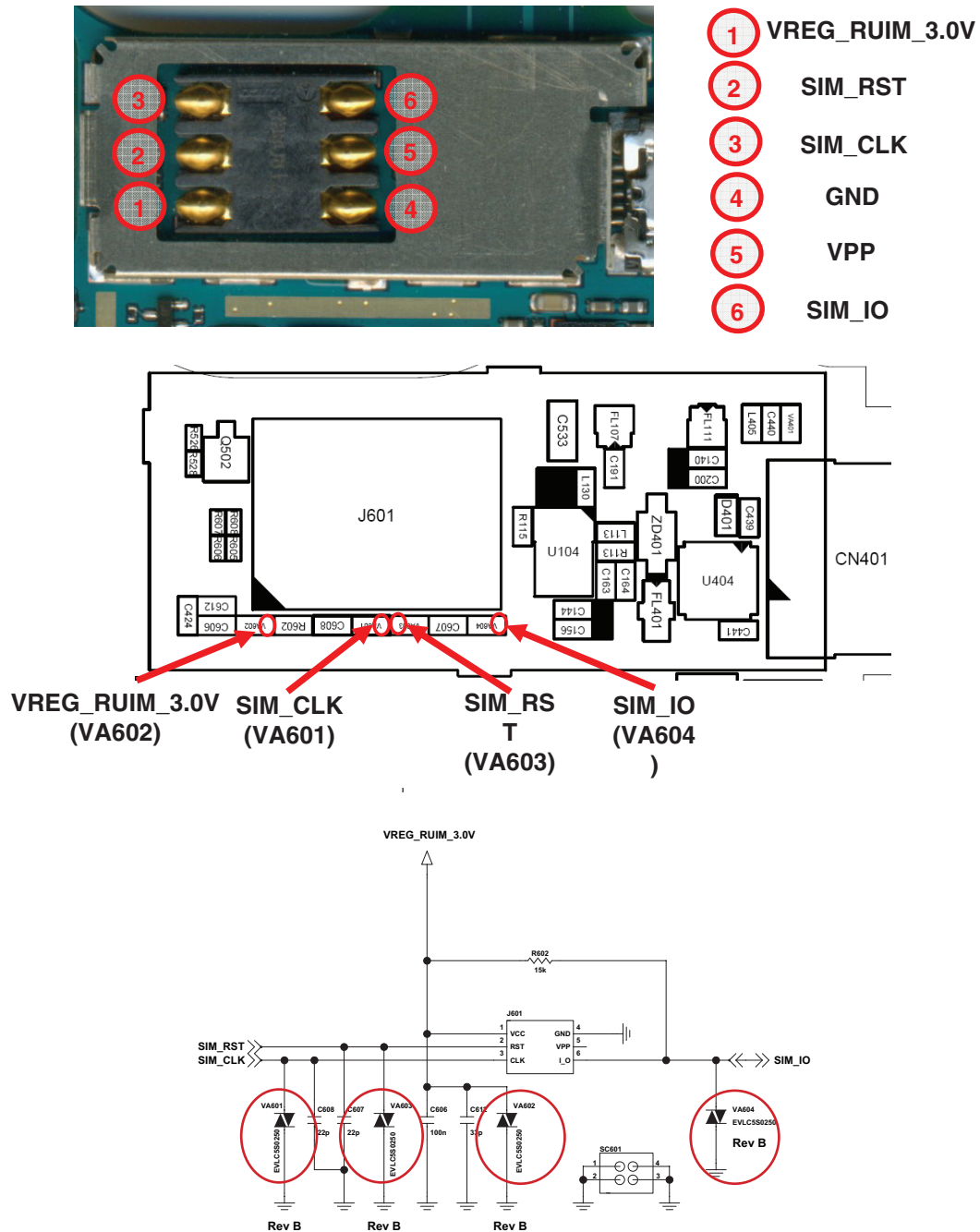


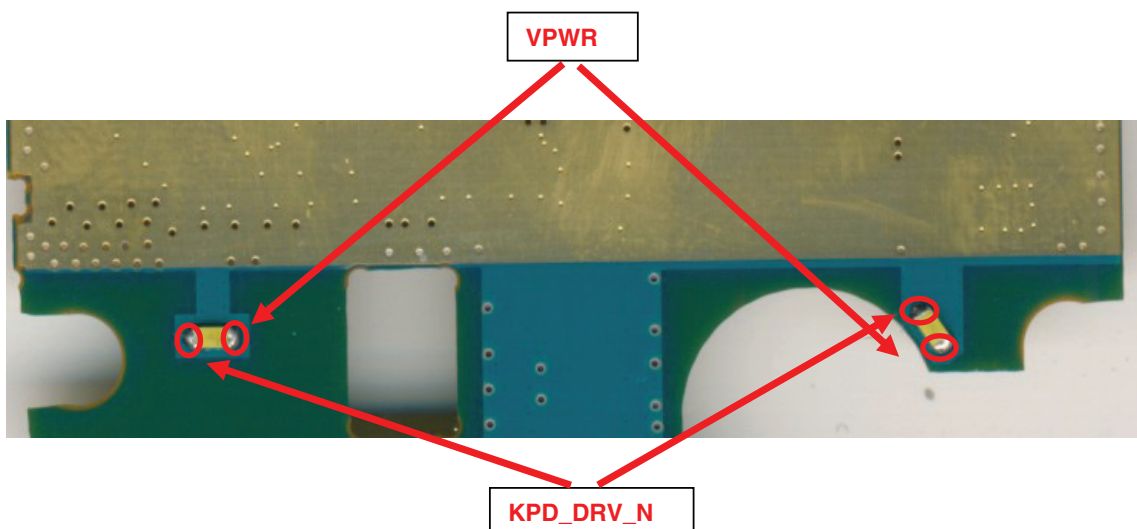
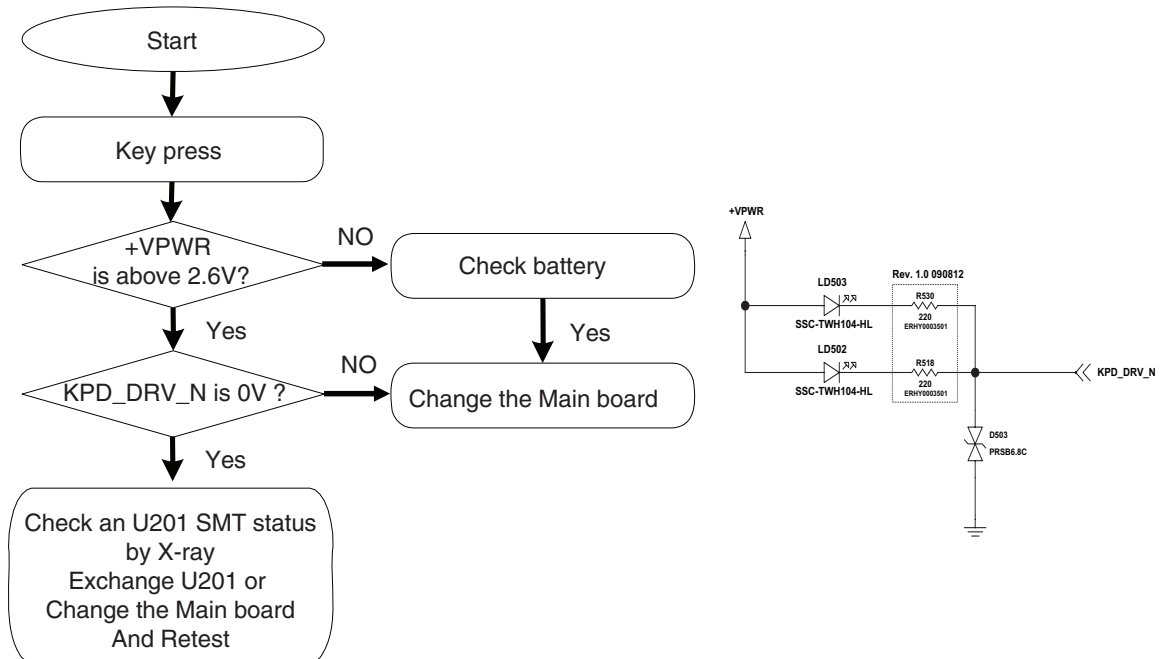
Figure .USIM part schematics

4. TROUBLE SHOOTING

4.15 Keypad Backlight Troubleshooting

Key Pad Back Light is on as below :

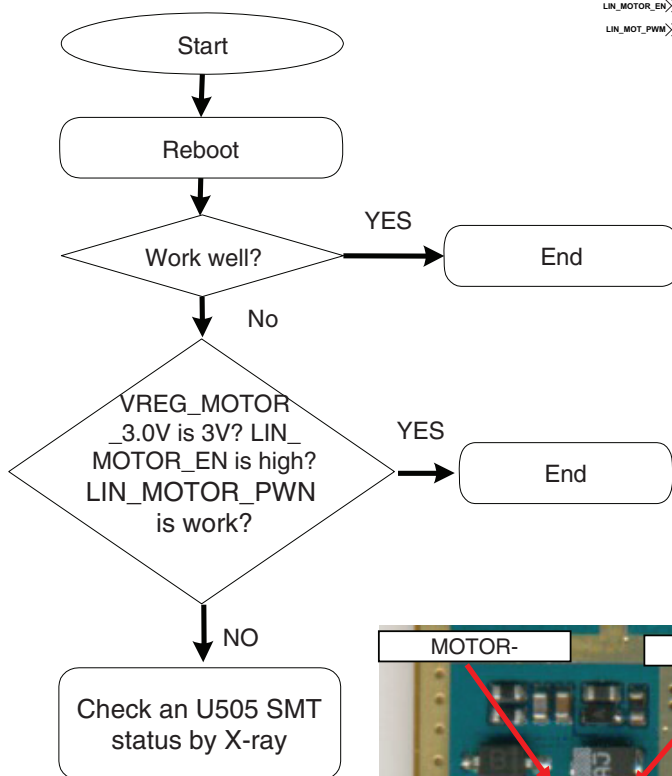
Key pressing → KPD_DRV_N go to 0V → Key Backlight LED On



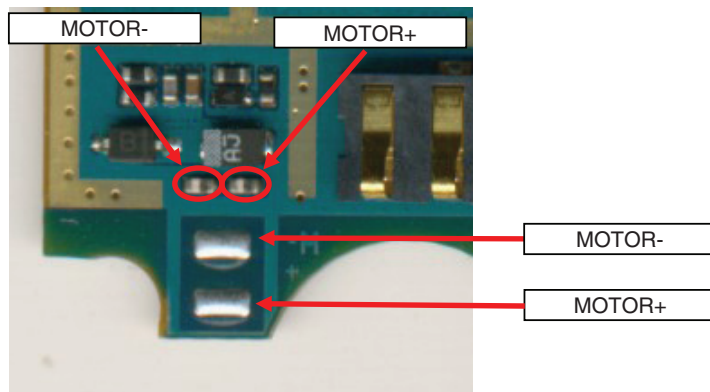
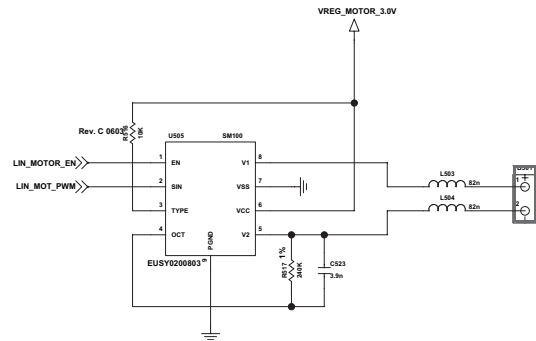
4.16 LINEAR MOTOR

Linear Motor is worked as below :
touch touch-window → Vibration feedback

U505 : Used the PWM pulse



LINEAR MOTOR DRIVER

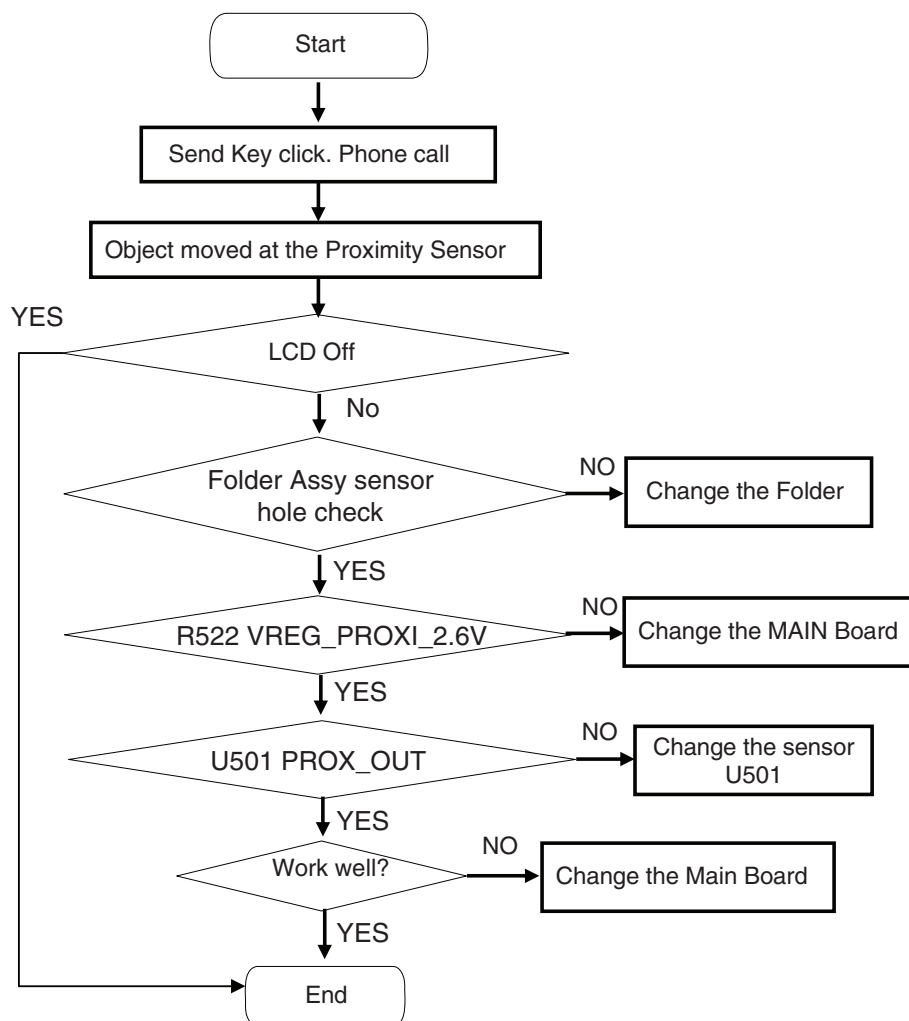


4. TROUBLE SHOOTING

4.17 Proximity Sensor on/off trouble

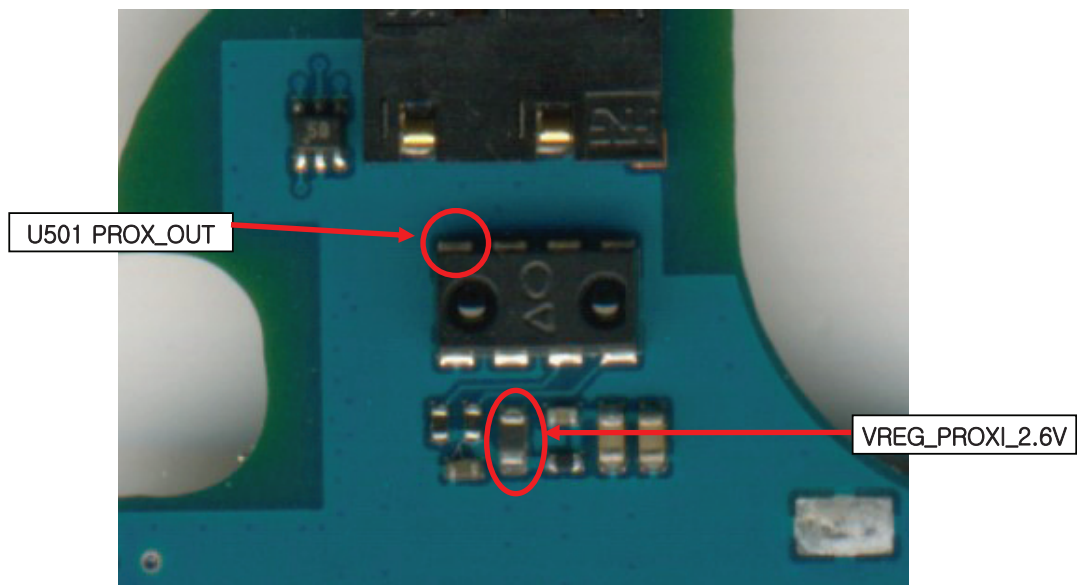
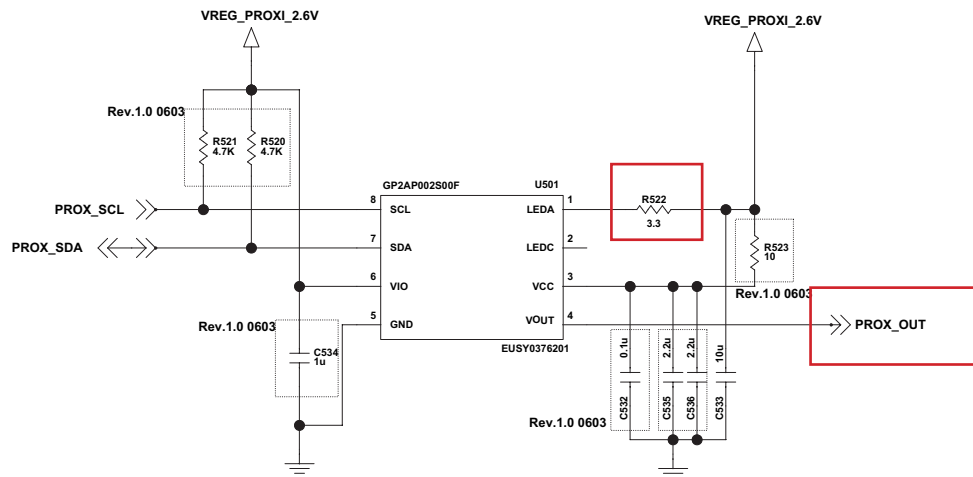
Proximity Sensor is worked as below :

Send Key click → Phone number click → Call connected → Object moved at the sensor
→ Control the screen's on/off operation automatically



Proximity Sensor

(With the Control IC)

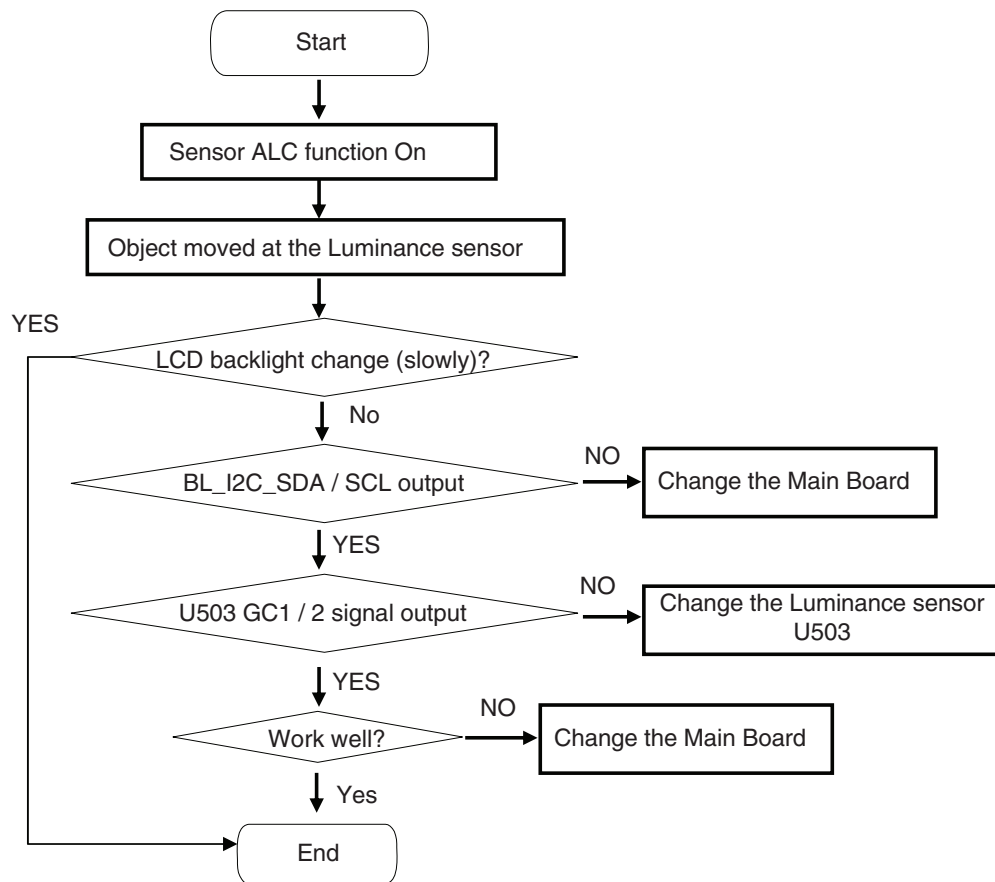


4. TROUBLE SHOOTING

4.18 Luminance Sensor on/off trouble

Luminance Sensor is worked as below :

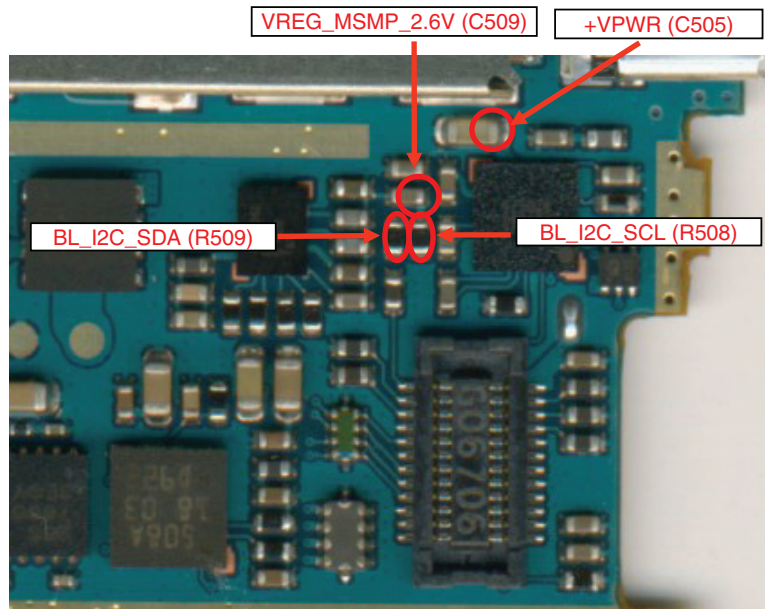
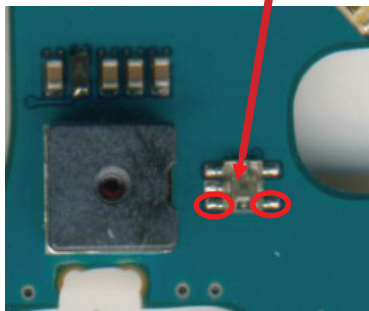
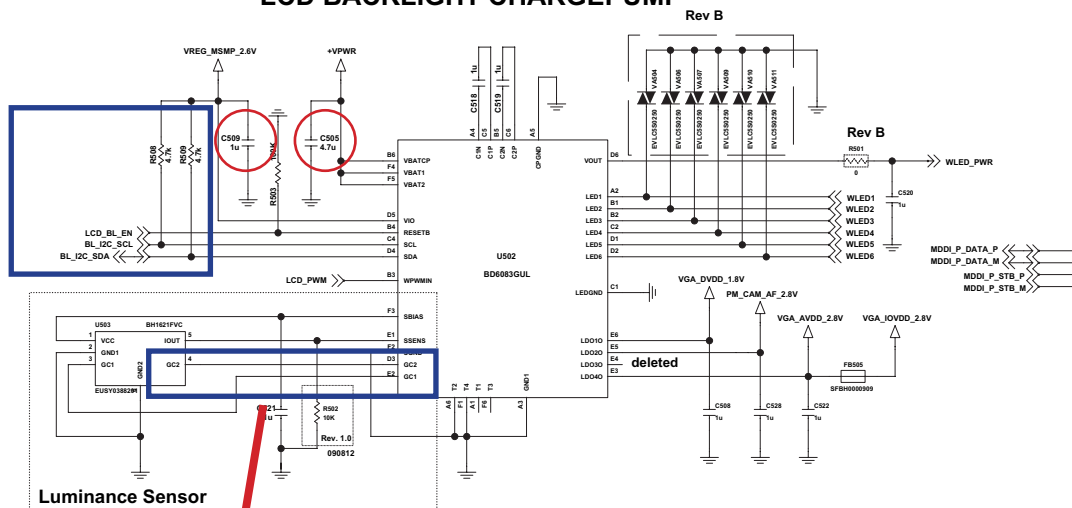
Sensor ALC function On → Object moved at the Luminance sensor
→ automatically controls brightness of the display backlight. (Slowly)



4. TROUBLE SHOOTING

- 1) Measurement :Main-U502, U503
- +VPWR : 4V (C505)
 - VREG_MSMP_2.6V : 2.6V (C509)
 - BL_I2C_SDA / SCL : data / CLK pulse (R508, R509)
 - U503 (GC1 / GC2) : data pulse

LCD BACKLIGHT CHARGE PUMP

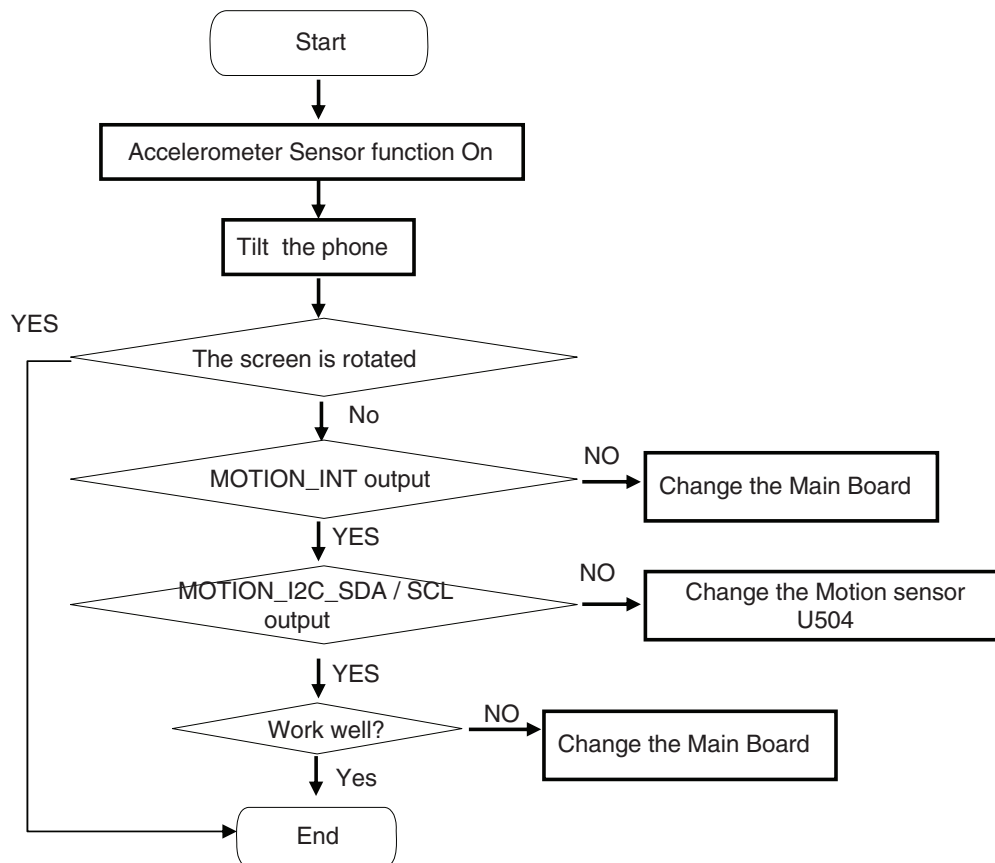


4. TROUBLE SHOOTING

4.19 Motion Sensor on/off trouble

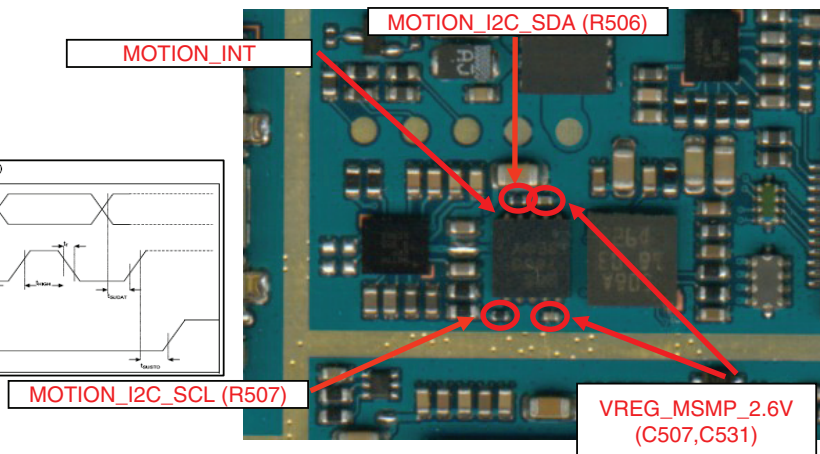
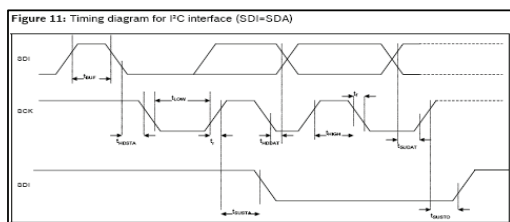
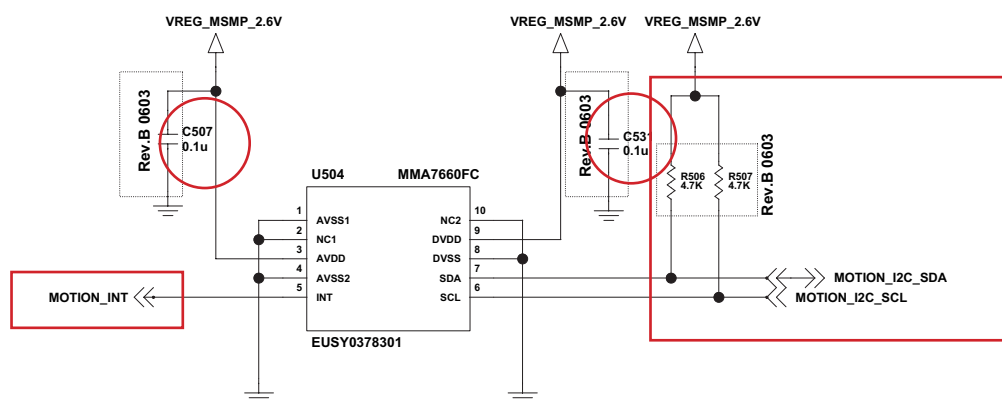
Motion Sensor is worked as below :

Accelerometer Sensor function On → Tilt the phone (90°) → The screen is had rotated automatically.



4. TROUBLE SHOOTING

- 1) Measurement : Main(U504)
- VREG_MSMP_2.6V : 2.6V (C507, C531)
 - MOTION_INT : High enable U504 No.5 pin
 - MOTION_I2C_SDA / SCL : data / CLK pulse (R506, R507)



5. Download

5. Download

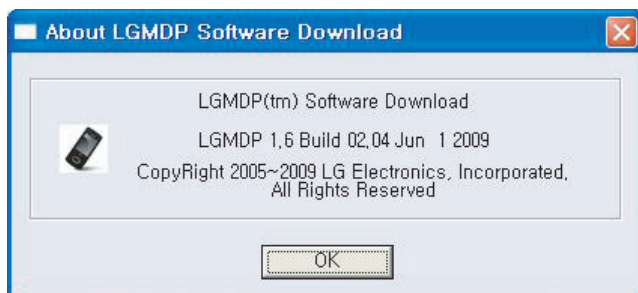
Before download

1. Requirements for download

1) USB Cable.



2) “LGMDP”



3) “LG_Layla_SPUSBDriver_WHQL_ML_Ver_1.0.exe” must be installed in your PC

Before download

2. Install LG USB driver.

- 1) Before you install LG USB driver, Remove the USB cable from LAYLA.
- 2) Execute “[LG_Layla_SPUSBDriver_WHQL_ML_Ver_1.0.exe](#)” or later.

* USB Driver install Guide *

1. Install usb drivers[Developer]

- for QPST_QXDM and LG MDP tools

[LG_Layla_SPUSBDriver_WHQL_ML_Ver_1.0.exe](#)

: This include the SW Download driver and QPST & QXDM driver for developer

5. Download

Image Download (before v09d)

1. Turn Layla OFF.

- 1) Remove the battery from LAYLA.
- 2) Or remove the LT cable from LAYLA.

2. Enter download mode. (Emergency download mode)

- 1) Press “OK” key in Optical Joystick.
- 2) Press “Power on” button while “OK” keys are pressed.
- 3) Check the front LED is green and the LCD is displaying “Emergency download”.

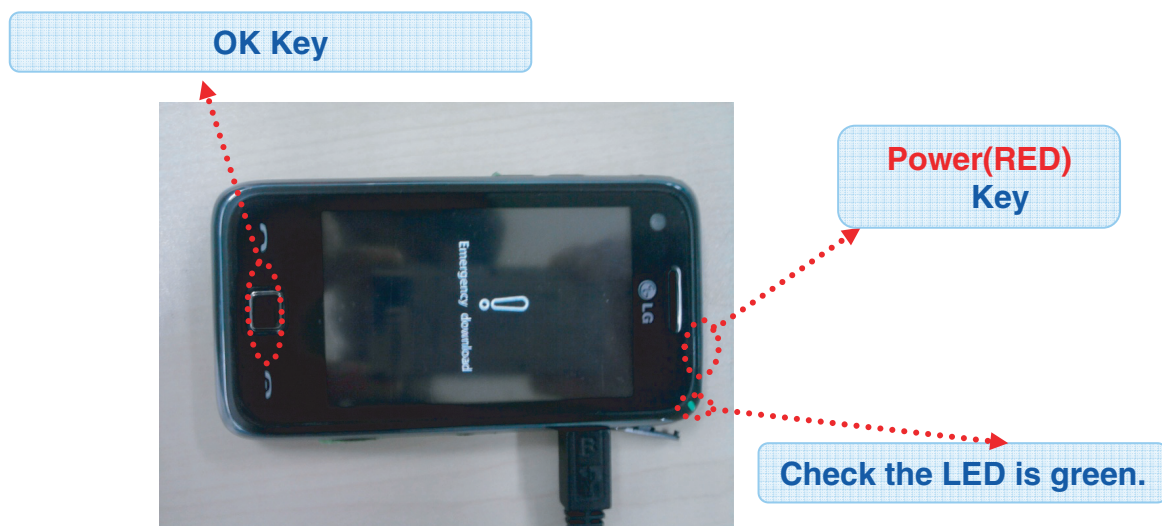


Image Download (after downloading v09d)

1. Turn Layla OFF.

- 1) Remove the battery from LAYLA.
- 2) Or remove the LT cable from LAYLA.

2. Enter download mode. (Emergency download mode)

- 1) Press “Volume down” + “Multi tasking” simultaneously
- 2) Press “Power on” button while “Volume down”+ “Multi tasking” keys are pressed.
- 3) Check the front LED is green and the LCD is displaying “Emergency download”.



5. Download

Image Download

- Execute "LGMDP" Tool.

- 1) Please check the LGMDP version

- **Download Tool(LGMDP) guide***

We recommend LGMDP_Ver_1_6_Build_2_4 version or later to Flash Image.

- 1. LGMDP_ALL_Ver_1_6_Build_2_4.exe

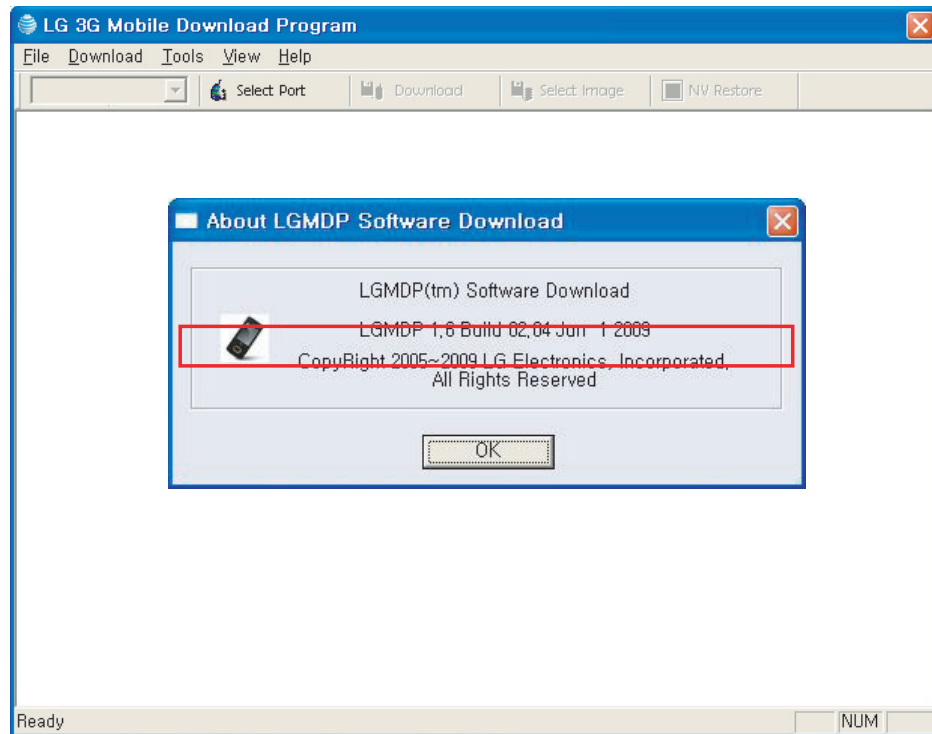
- : It will work only in the PC (waterwall[LG security program] should be installed)

- 2. LGMDP_EURO_Ver_1_6_Build_2_4.exe

- : It will work anywhere and only in non-US project.

Download with LG MDP	SW image	NV items	Note
Download(general)	O	X	NV area will not be changed
Download (general+CEFS.mbn)	O	O	It will cause change the Calibration Data
Download(DZ file)	O	X	NV area will not be changed
Download(ROMcopy)	O	O	It will cause change the Calibration Data

- Execute “LGMDP” Tool.
 - 1) Please check the LGMDP version
 - LGMDP_Ver_1_6_Build_2_4 June 1 2009 or later.



5. Download

5. Select COM port.

- 1) Click "Select Port" icon then you can see the "Select Port Window".
 - LGMDP will show you available LG USB port.
- 2) Click "Connect" button.

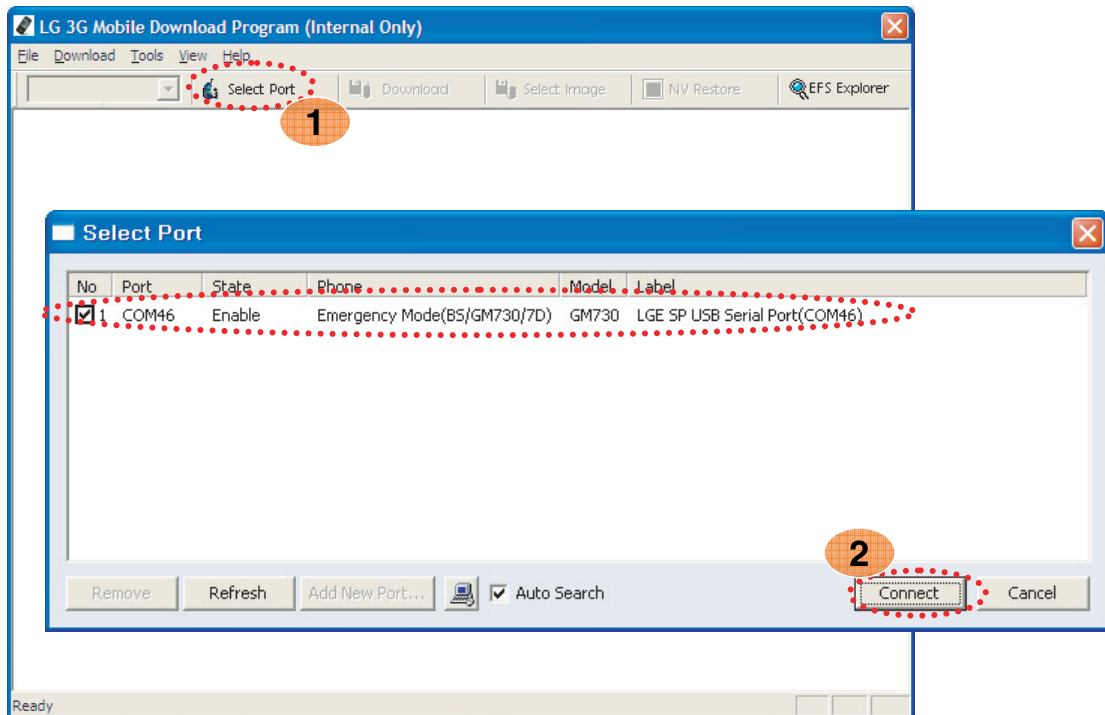
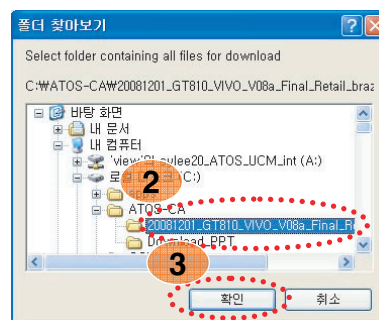
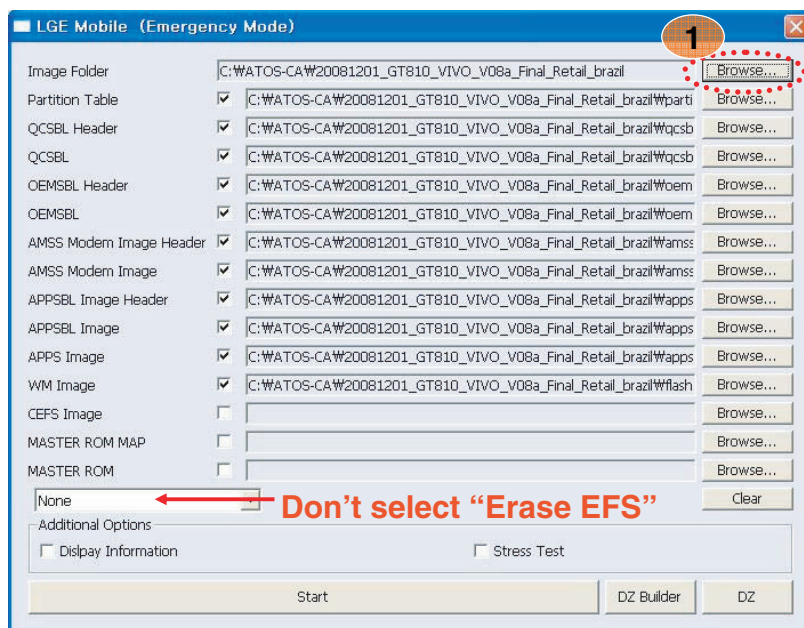


Image Download (general)

6. SW Image Download

- 1) Click “Browse...” button, you can see the “Browse for Folder” window.
- 2) Choose the folder that include the SW images which you want to download.
- 3) Click “OK” Button.



5. Download

6. SW Image Download

1) Click “Yes” button.

2)&3) LG MDP download the image in your LAYLA as shown below automatically.

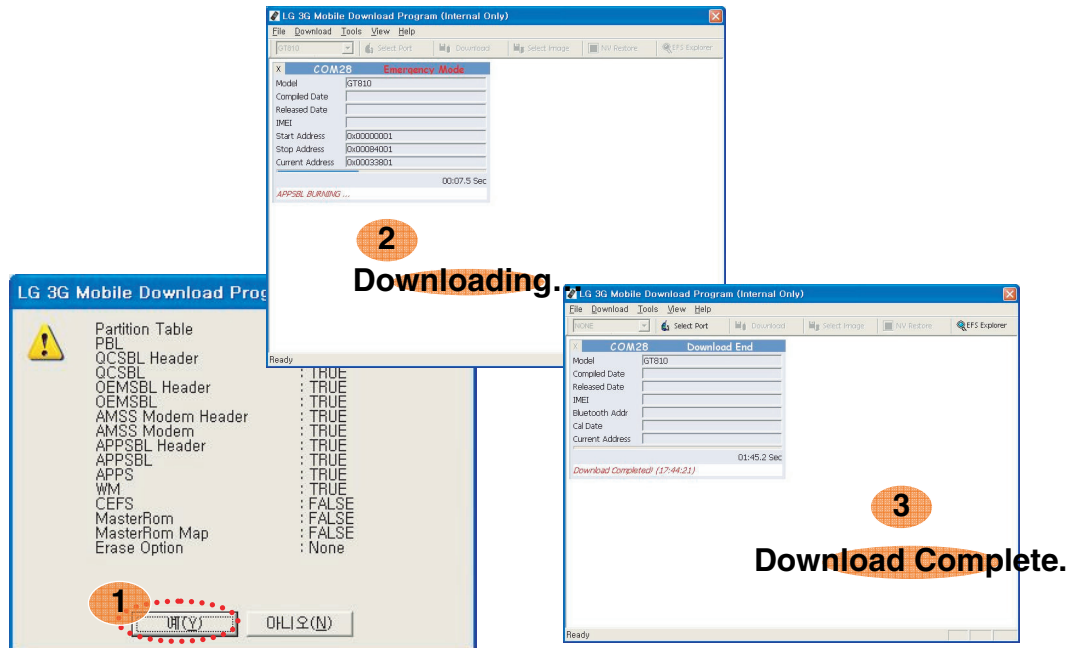
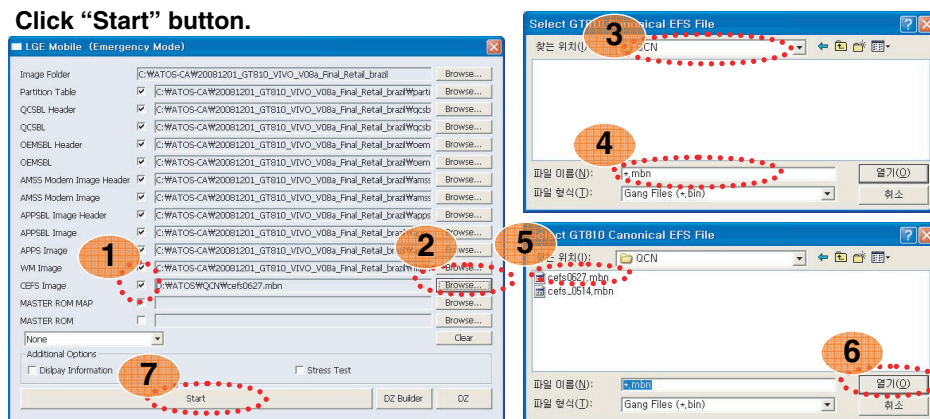


Image Download (general + CEFS.mbn)

7. ROM + CEFS image Download

- 1) Check(✓) CEFS Image box like below.
- 2) Click “Browse...” Button.
- 3) Choose the folder that include the CEFS image.
- 4) Type “*.mbn” or “*.*” and press Enter key. And you can see whole files in the folder you choose.
- 5) Choose CEFS Image(cefs0627.mbn file in the picture below).
- 6) Click “Open” button.
- 7) Click “Start” button.



*Note

Our SW is divided into two area (one is the SW image and the other is NV area (Non Volatile)

NV values are formatted into NVitems.qcn (20081121_LAYLA_Rev1.0.qcn) by using QPST(SW Download) tool

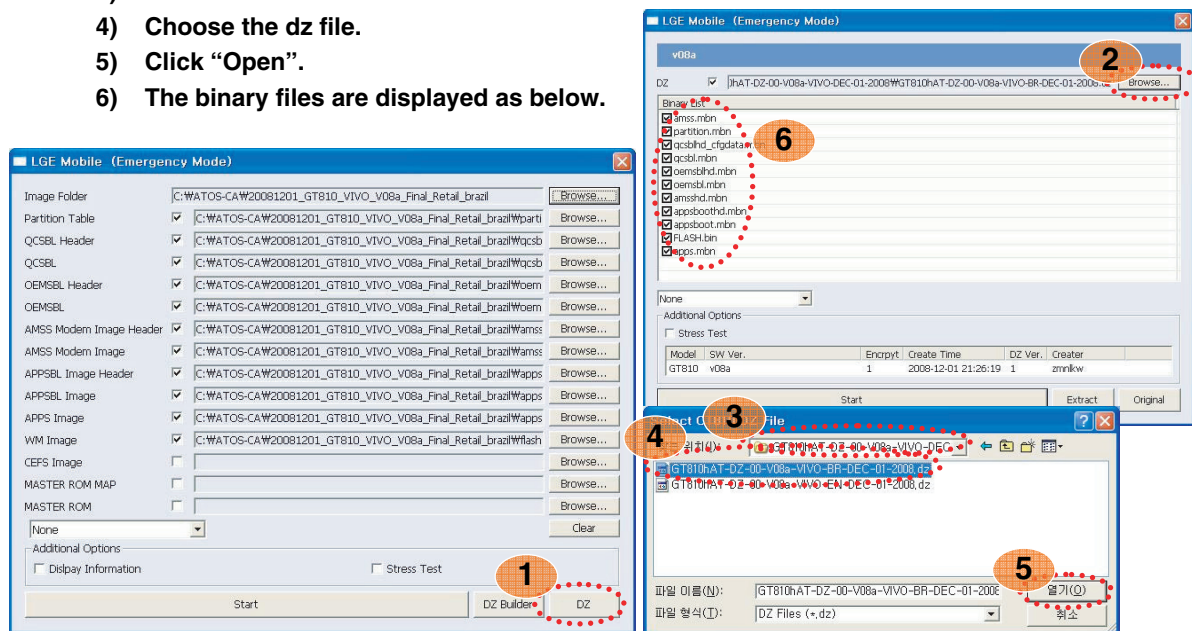
also formatted into CEFS.mbn (20081121_cefs_modem.mbn) by using LG_MDP tool

5. Download

Image Download (DZ file)

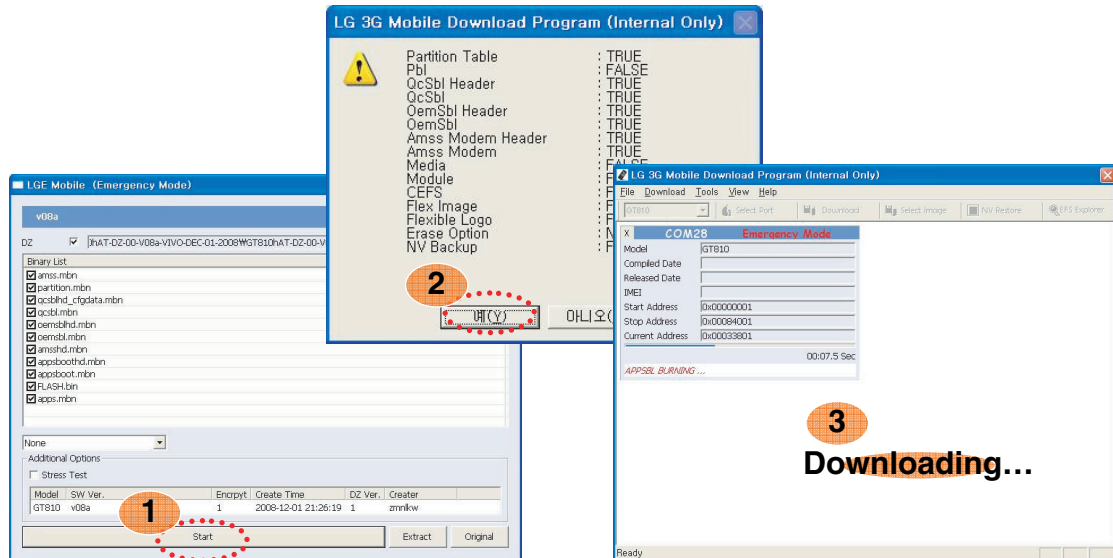
8. DZ file download

- 1) Click “DZ” button. And you can see the DZ file window.
- 2) Click “Browse...” button.
- 3) Choose the folder include the dz file.
- 4) Choose the dz file.
- 5) Click “Open”.
- 6) The binary files are displayed as below.



8. DZ file download

- 1) Click "Start" button.
- 2) The binary files to be downloaded are displayed in a dialog. Click "Yes" button.
- 3) It start downloading.

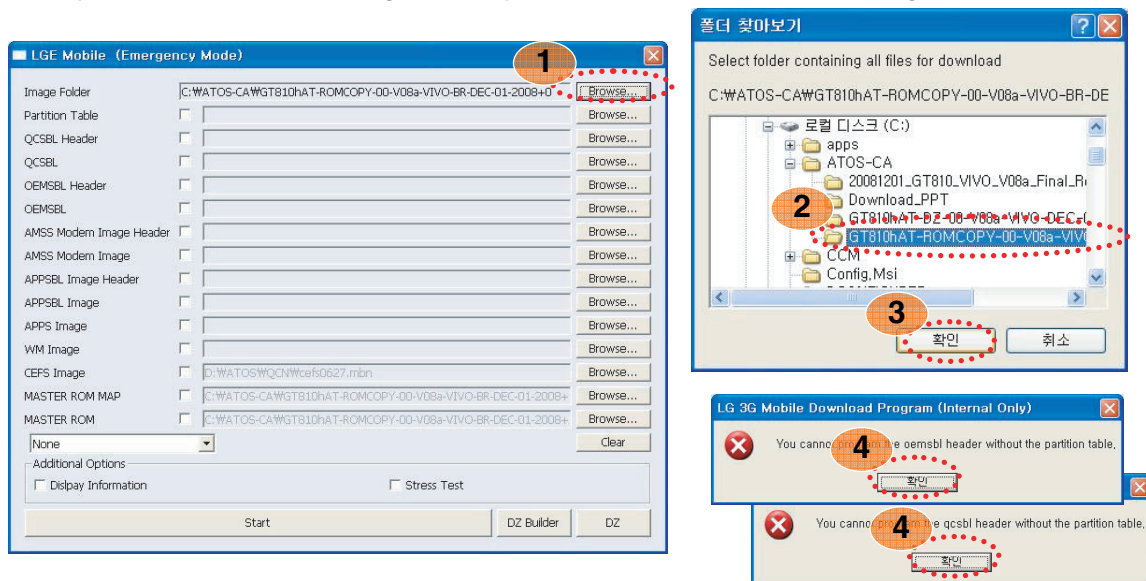


5. Download

Image Download (ROMcopy image)

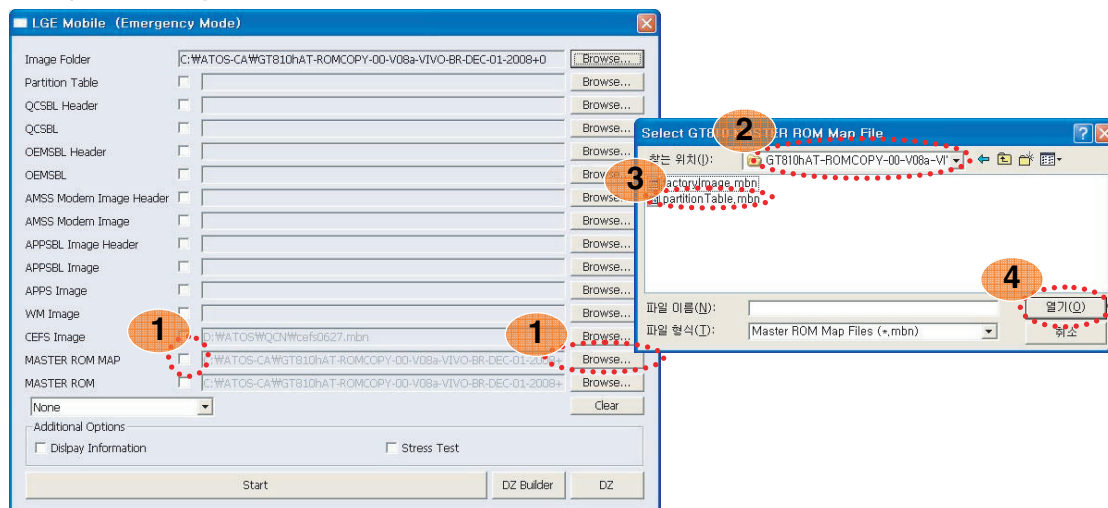
9. ROMcopy image download

- 1) Click “Browse...” button.
- 2) Choose the folder include ROMcopy images.
- 3) Click “OK” button.
- 4) A few notification dialogs come up. Click “OK” button in each dialog.



9. ROMcopy image download

- 1) Check(✓) MASTER ROM MAP and Click “Browse...” button.
- 2) Choose the folder include ROMcopy images.
- 3) Choose “partitionTable.mbn”.
- 4) Click “Open” button.

***Note**

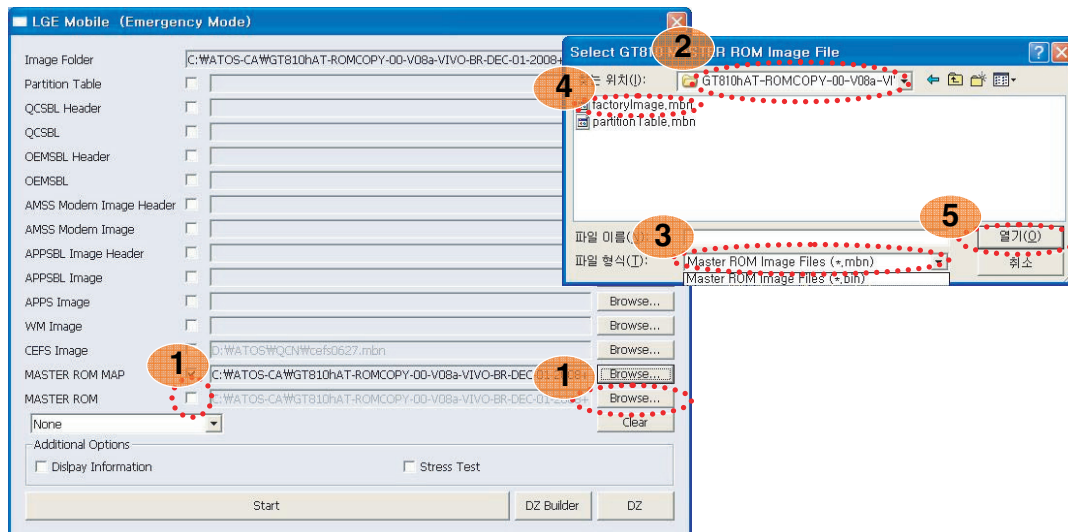
Our SW is divided into two area (one is the SW image and the other is NV area (Non Volatile)

ROMcopy include two area(SW image + NV area)

5. Download

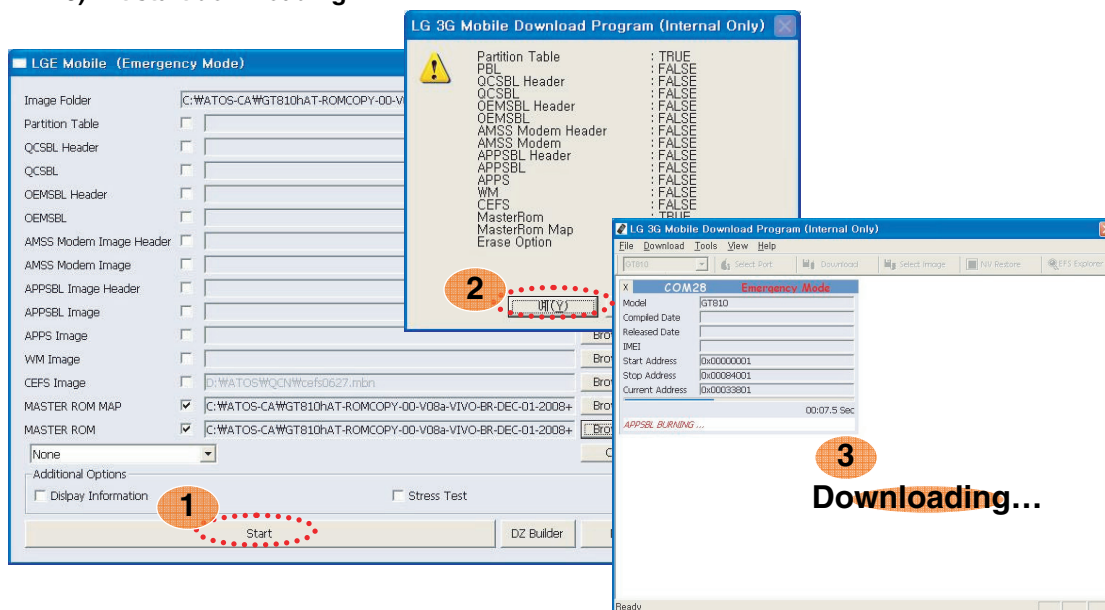
9. ROMcopy image download

- 1) Check(✓) MATER ROM and Click “Browse...” button.
- 2) Choose the folder include ROMcopy images.
- 3) Drop down the file type list, and choose “*.mbn”. And you can see all the mbn files.
- 4) Choose “factoryImage.mbn”.
- 5) Click “Open” button.

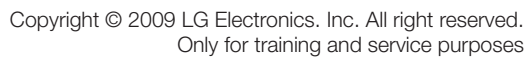


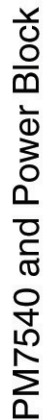
9. ROMcopy image download

- 1) Click "Start" button.
- 2) The binary files to be downloaded will be displayed in a dialog. Click "Yes" button.
- 3) It start downloading.



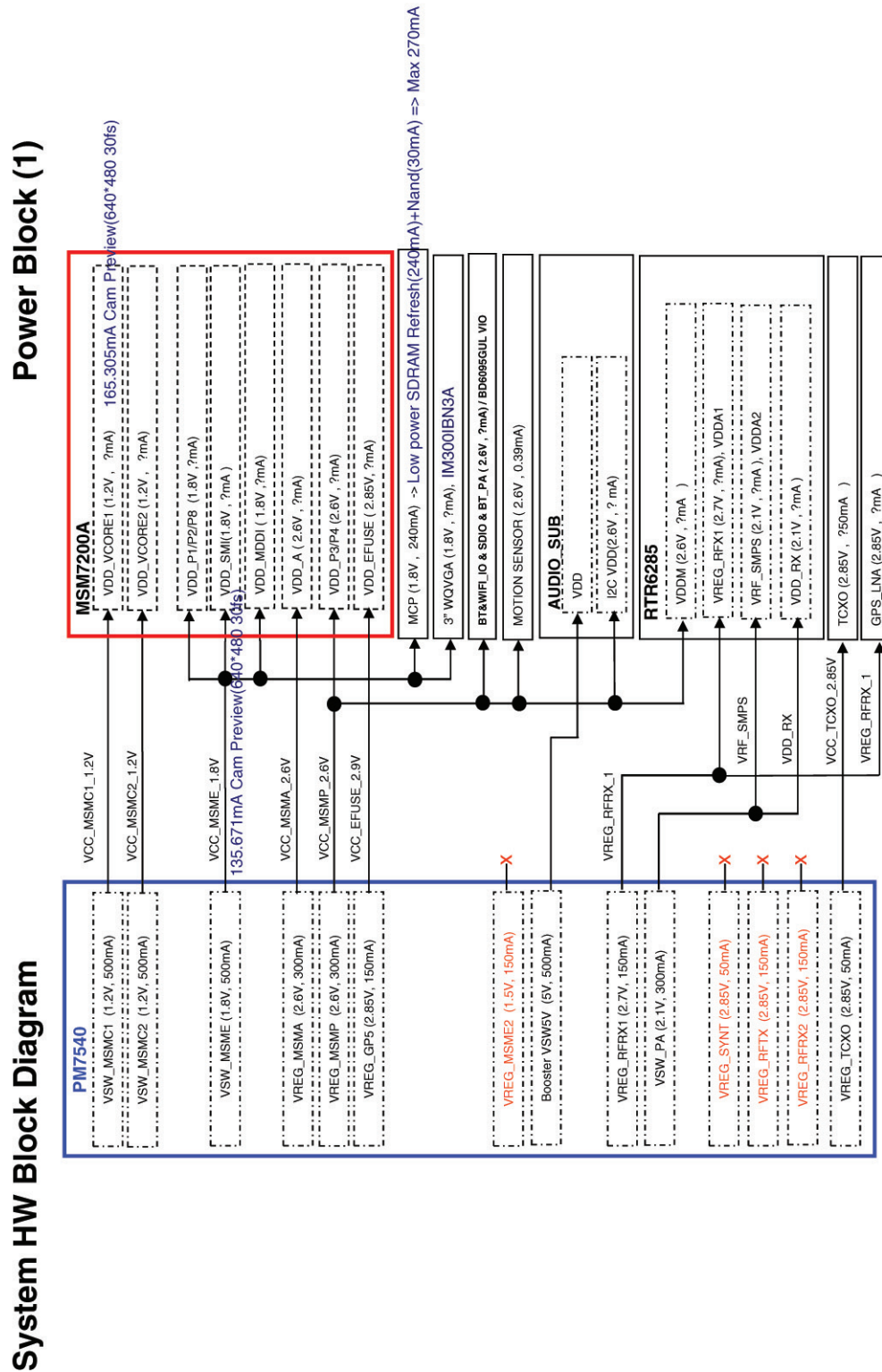
6. Block Diagram



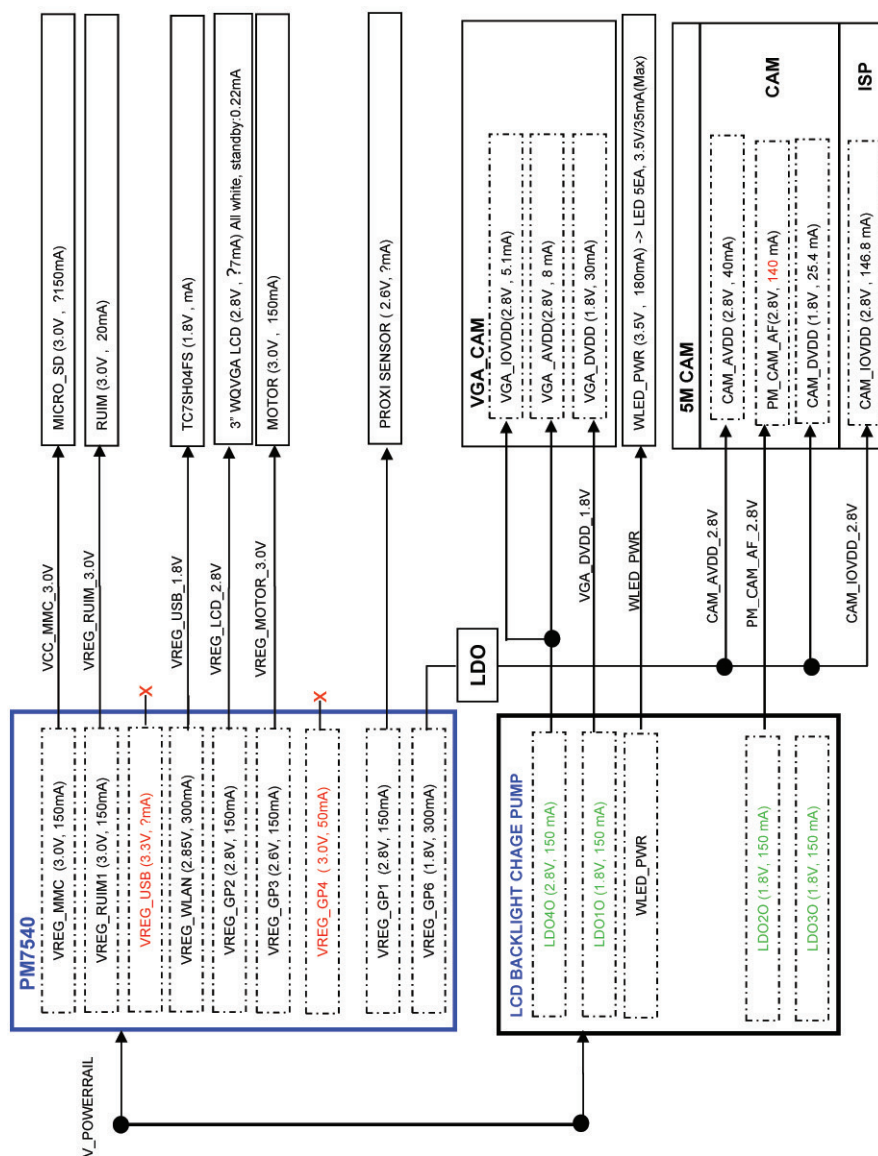


System HW Block Diagram

6. Block Diagram

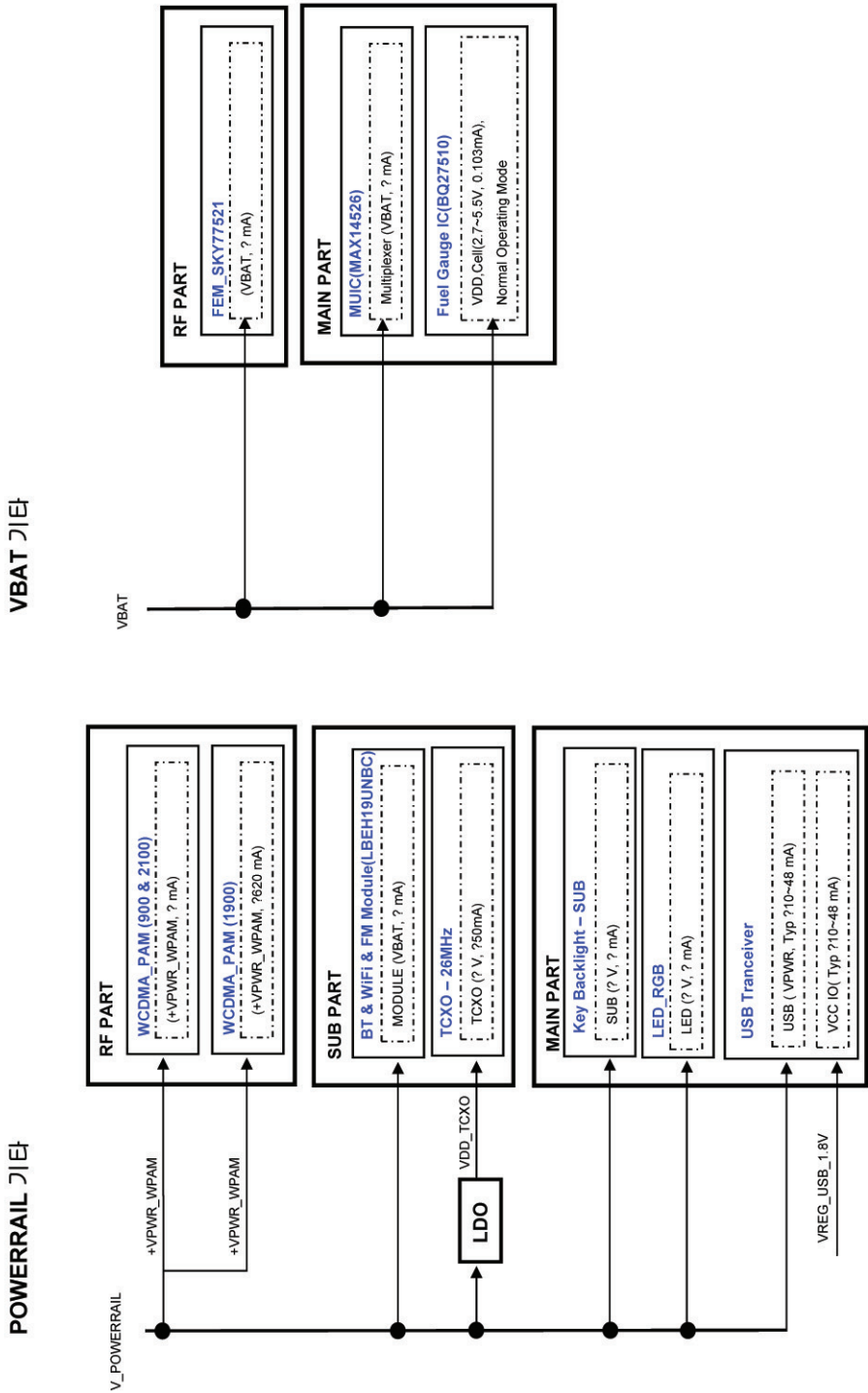


System HW Block Diagram



6. Block Diagram

Power Block (3)

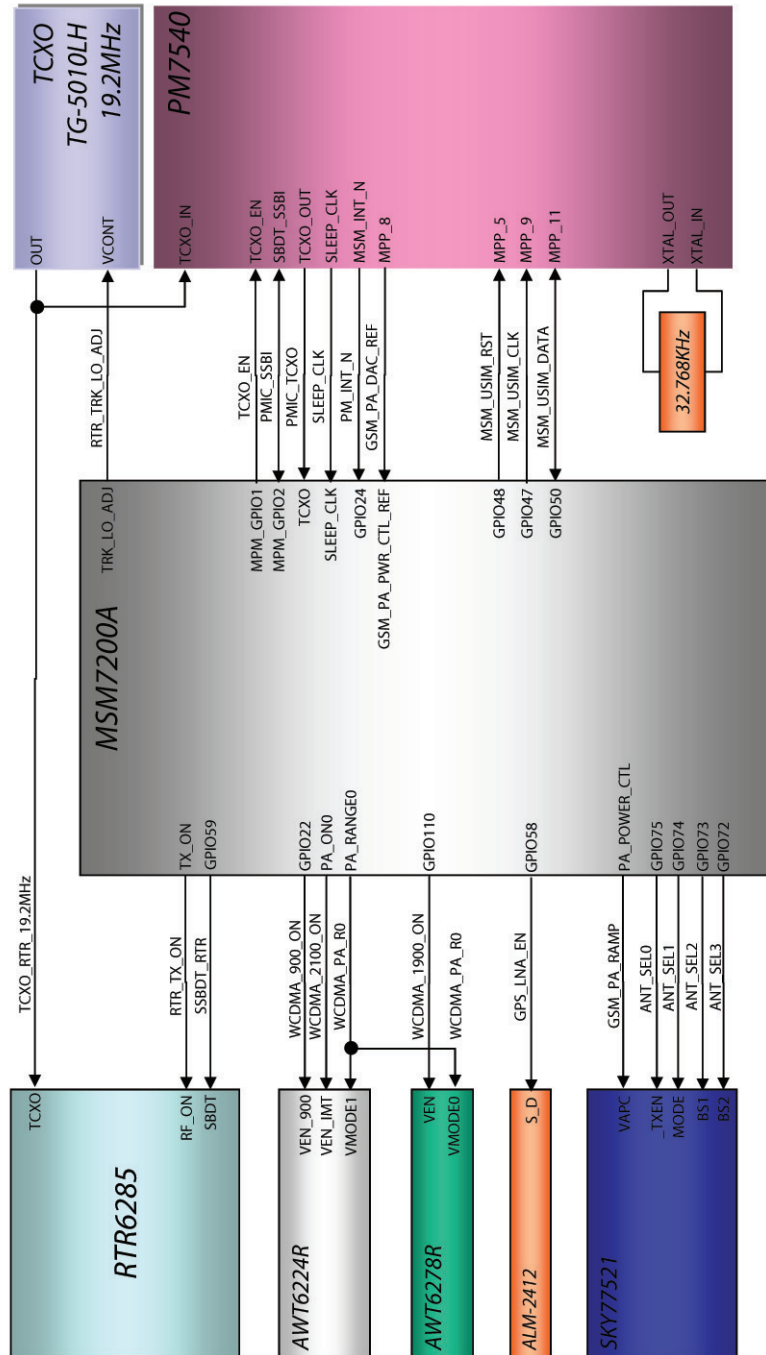


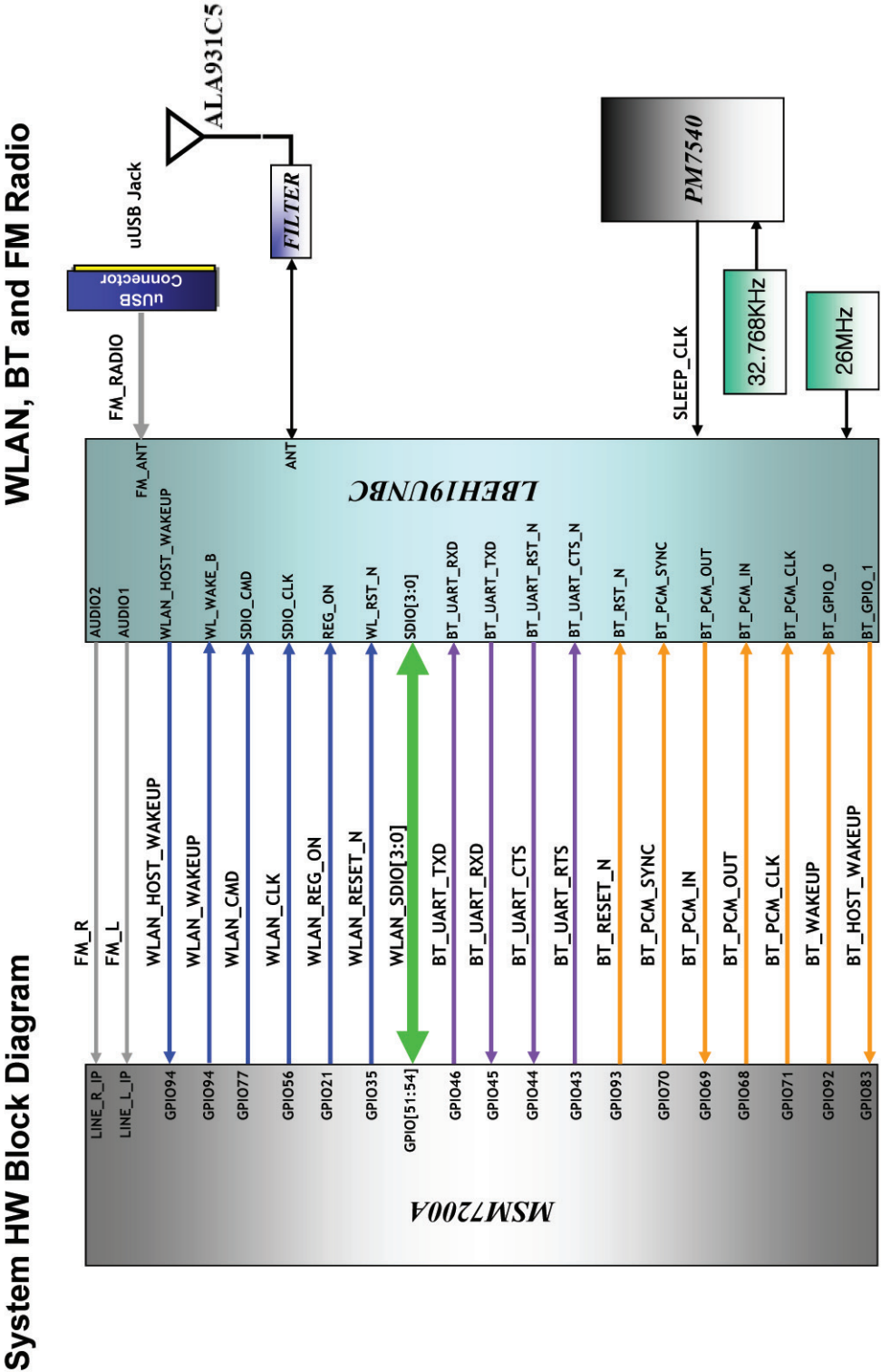
[illegible]

6. Block Diagram

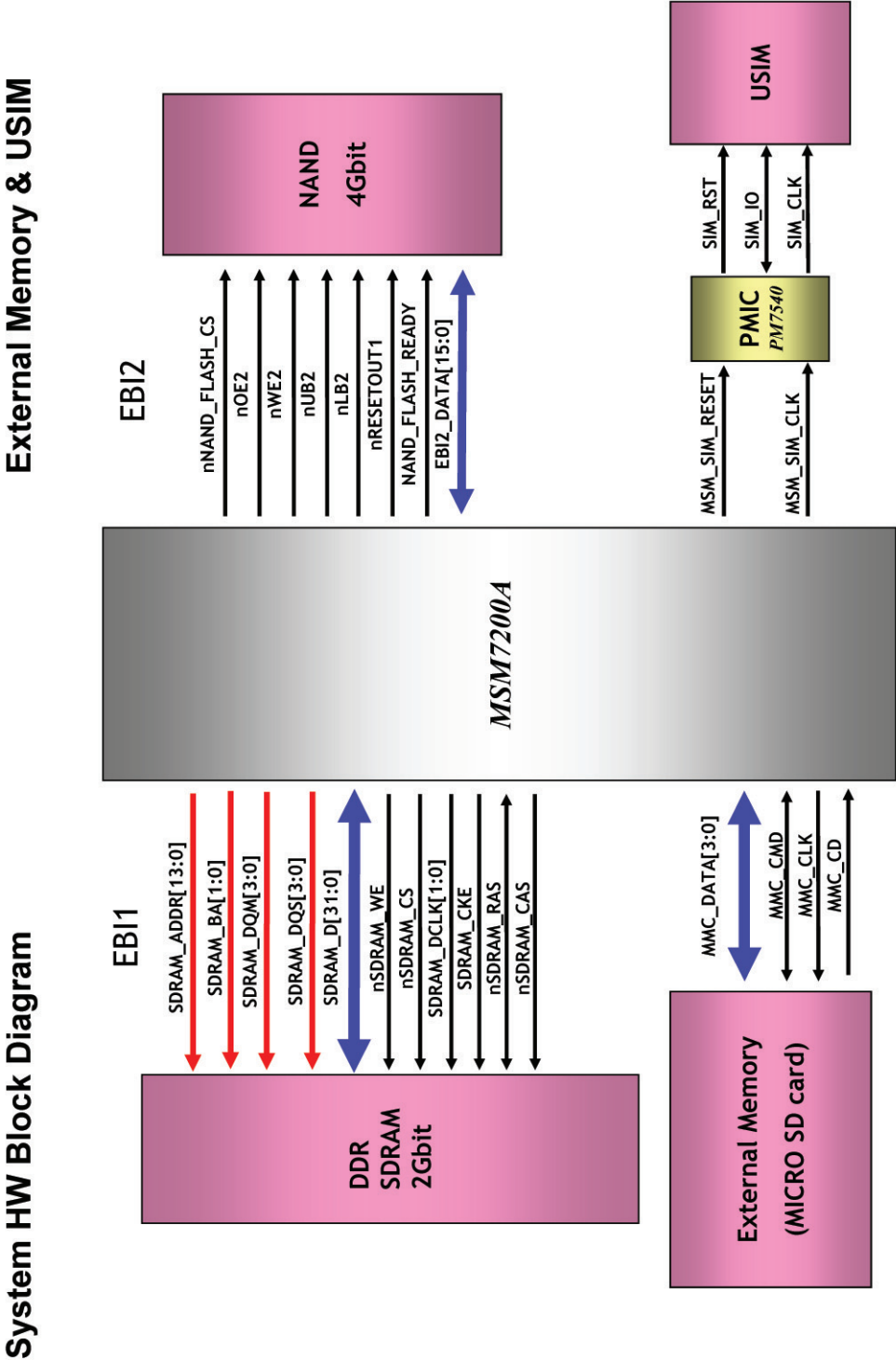
System HW Block Diagram

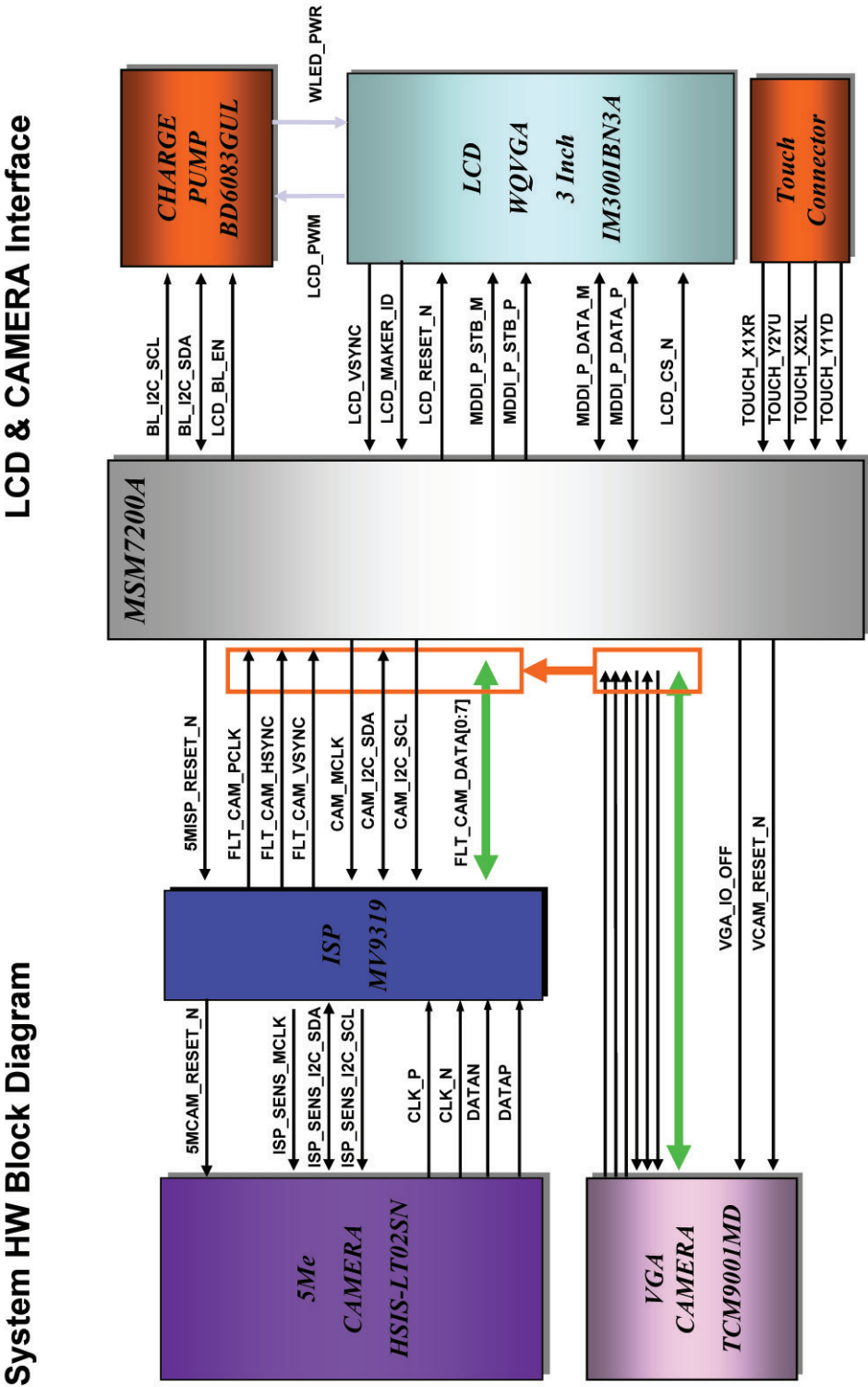
RF Control signals and Clocks





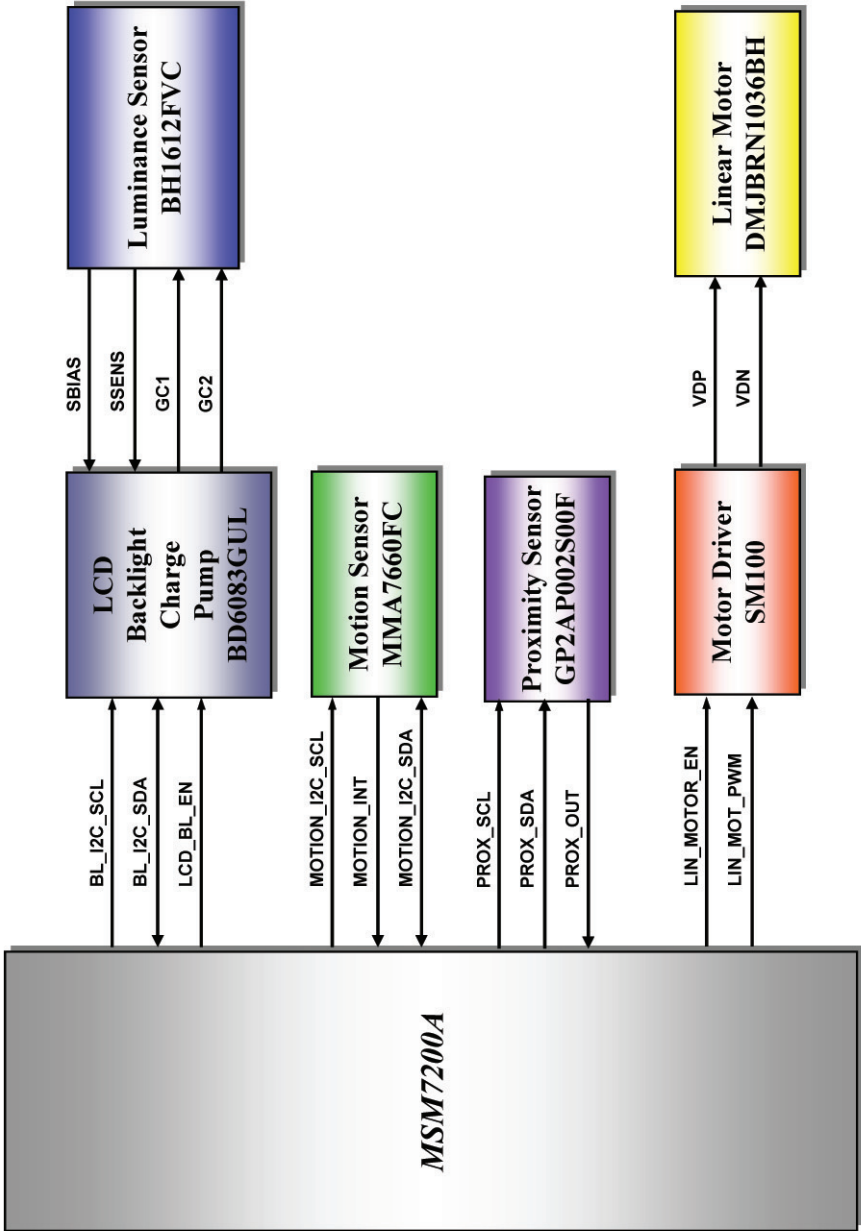
6. Block Diagram



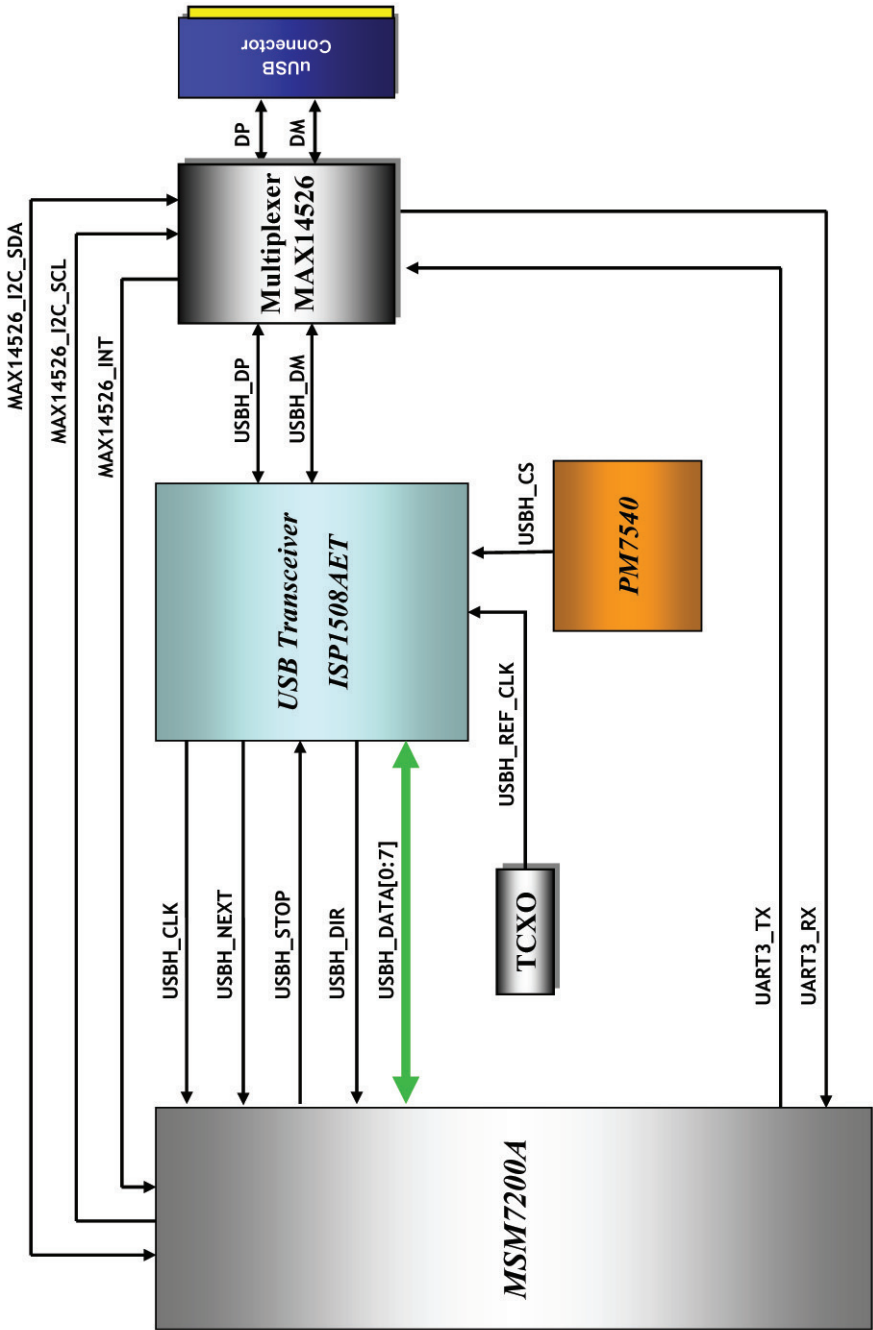


SENSORS & MOTOR

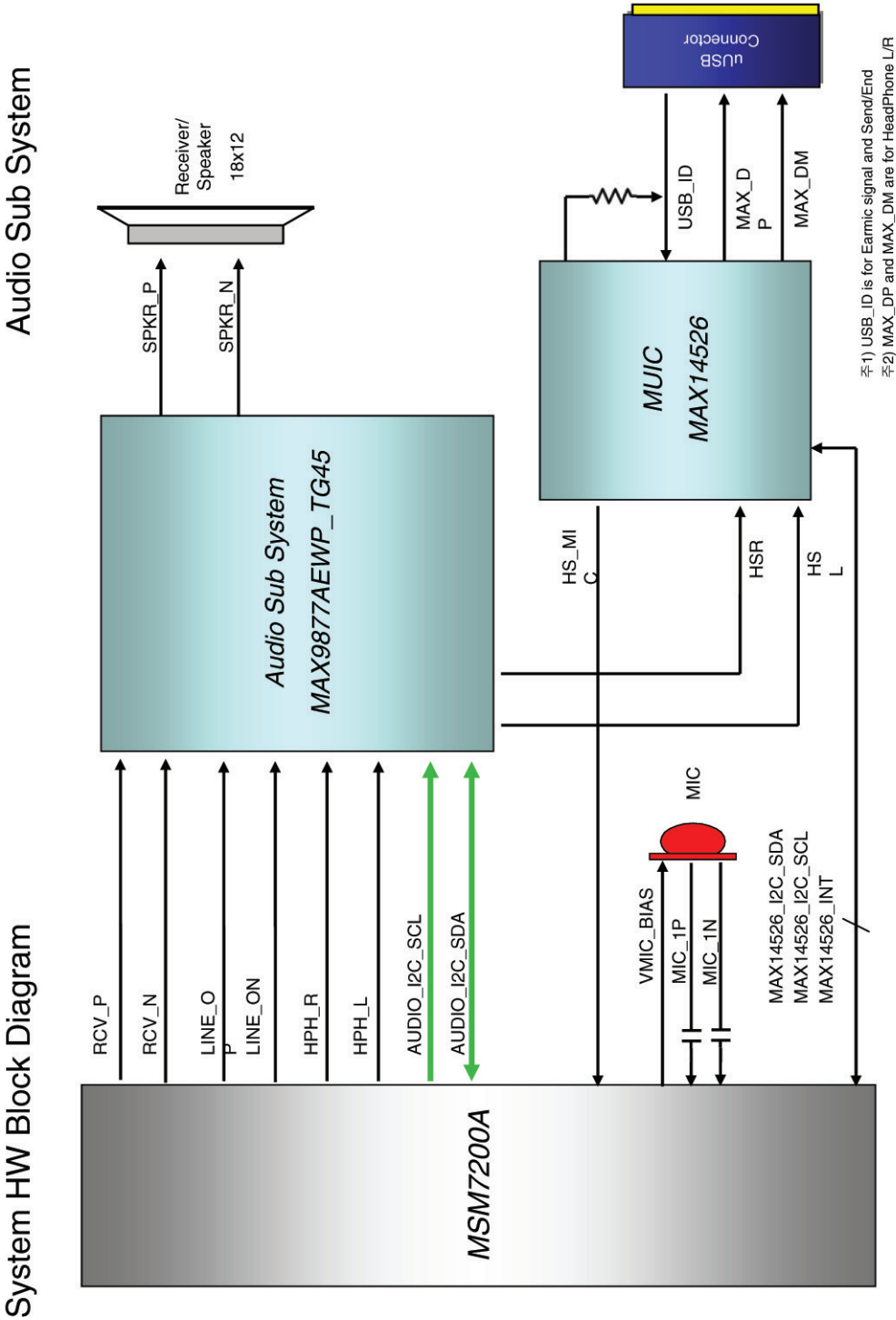
System HW Block Diagram



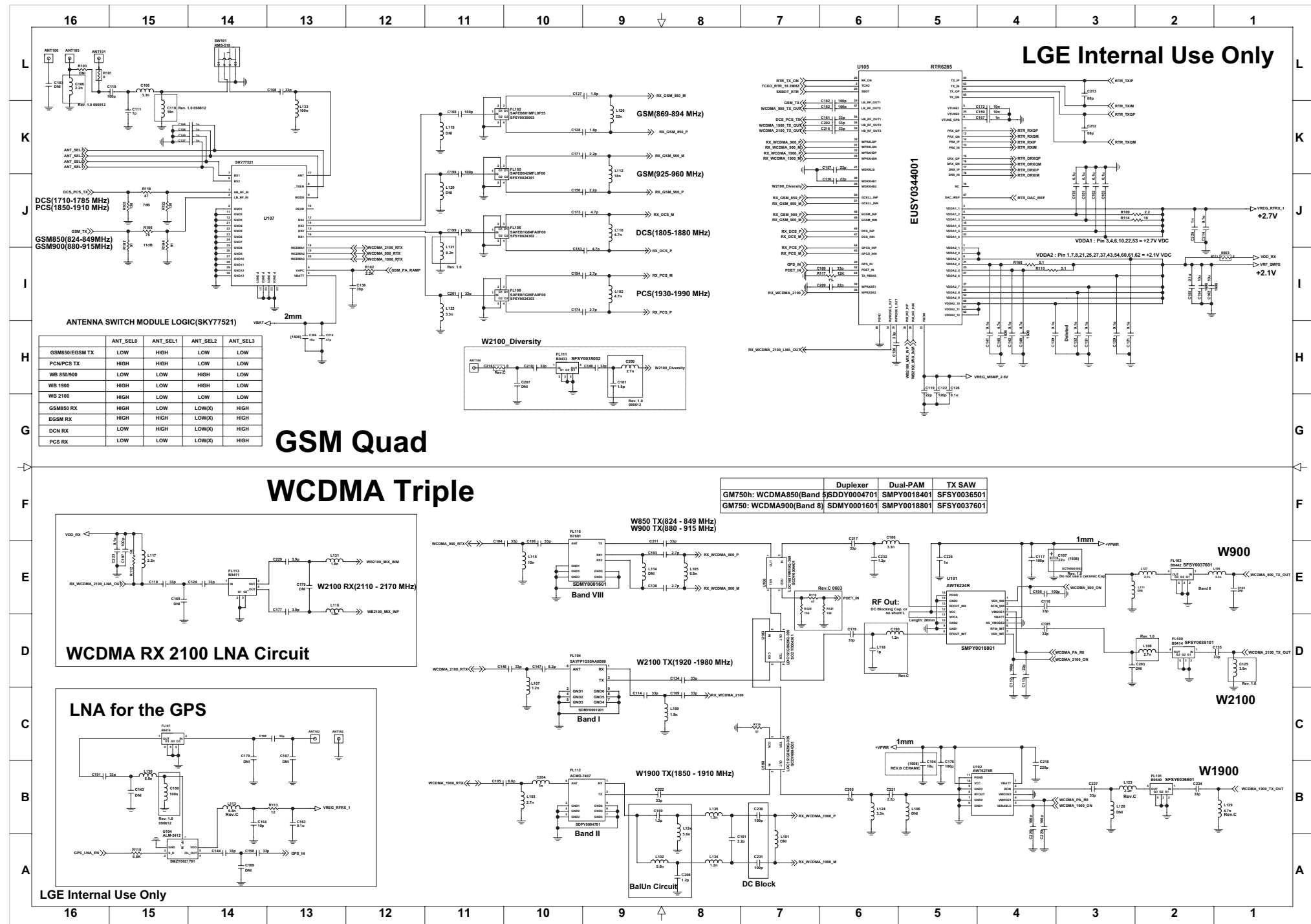
System HW Block Diagram



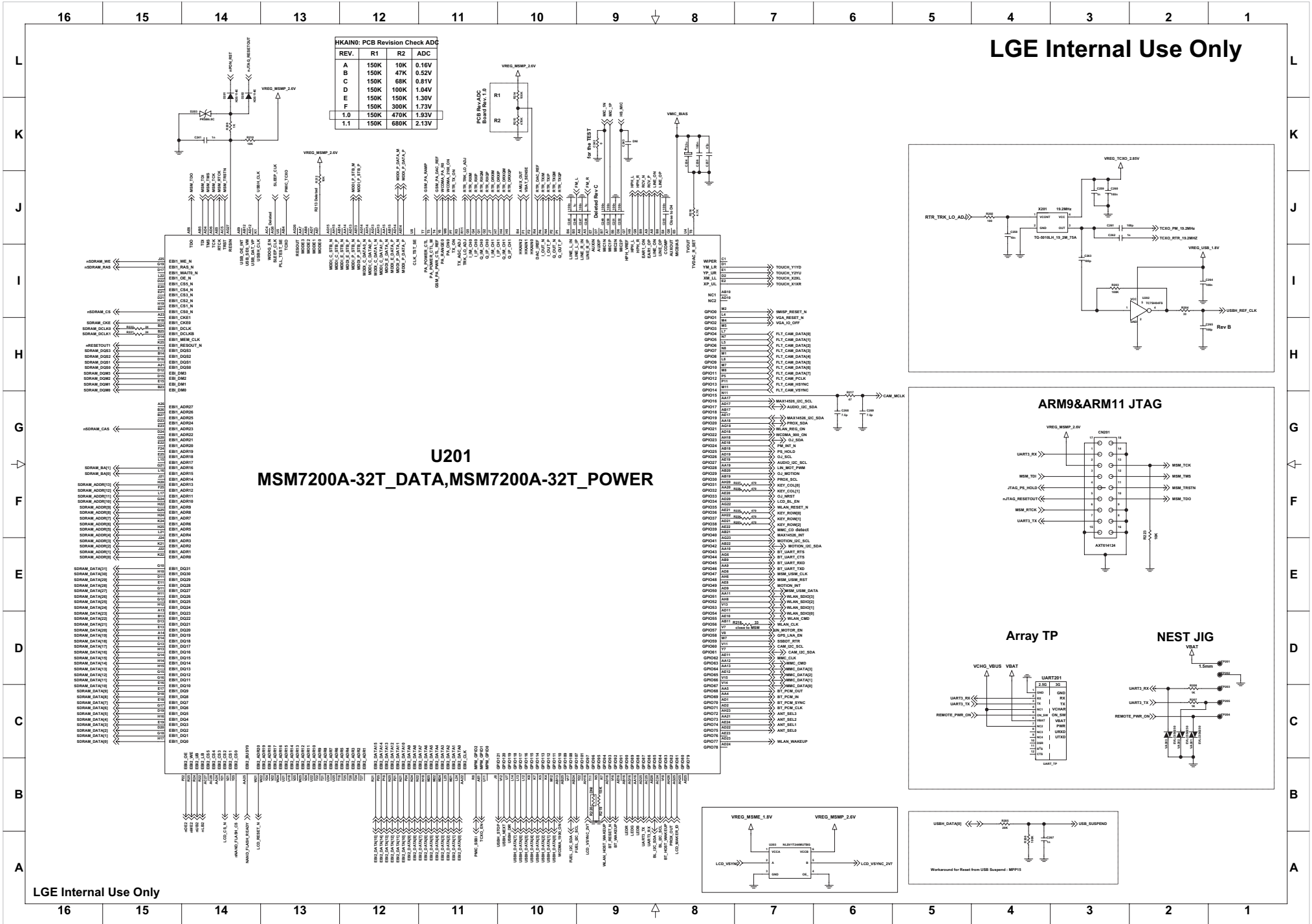
6. Block Diagram



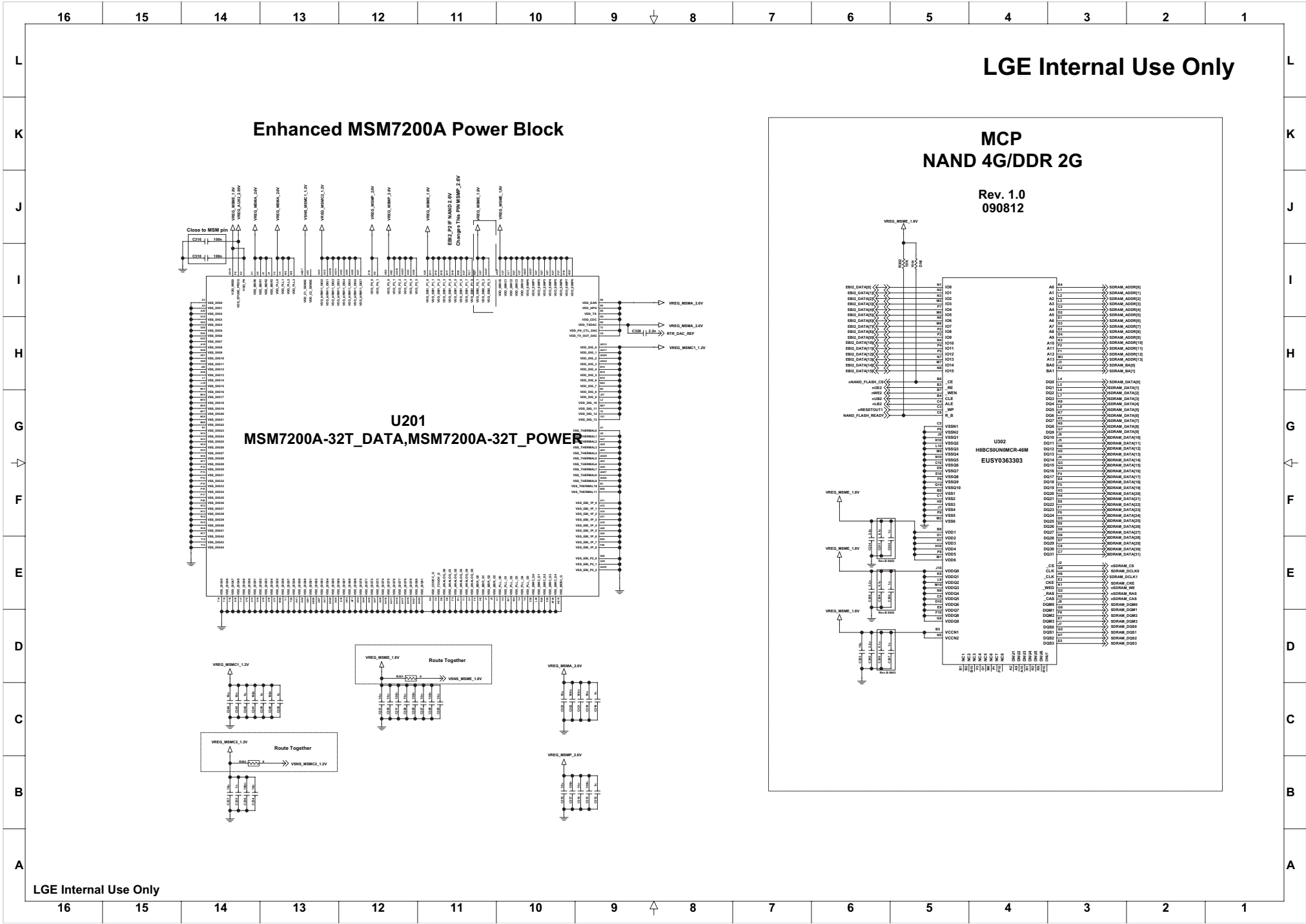
7. CIRCUIT DIAGRAM



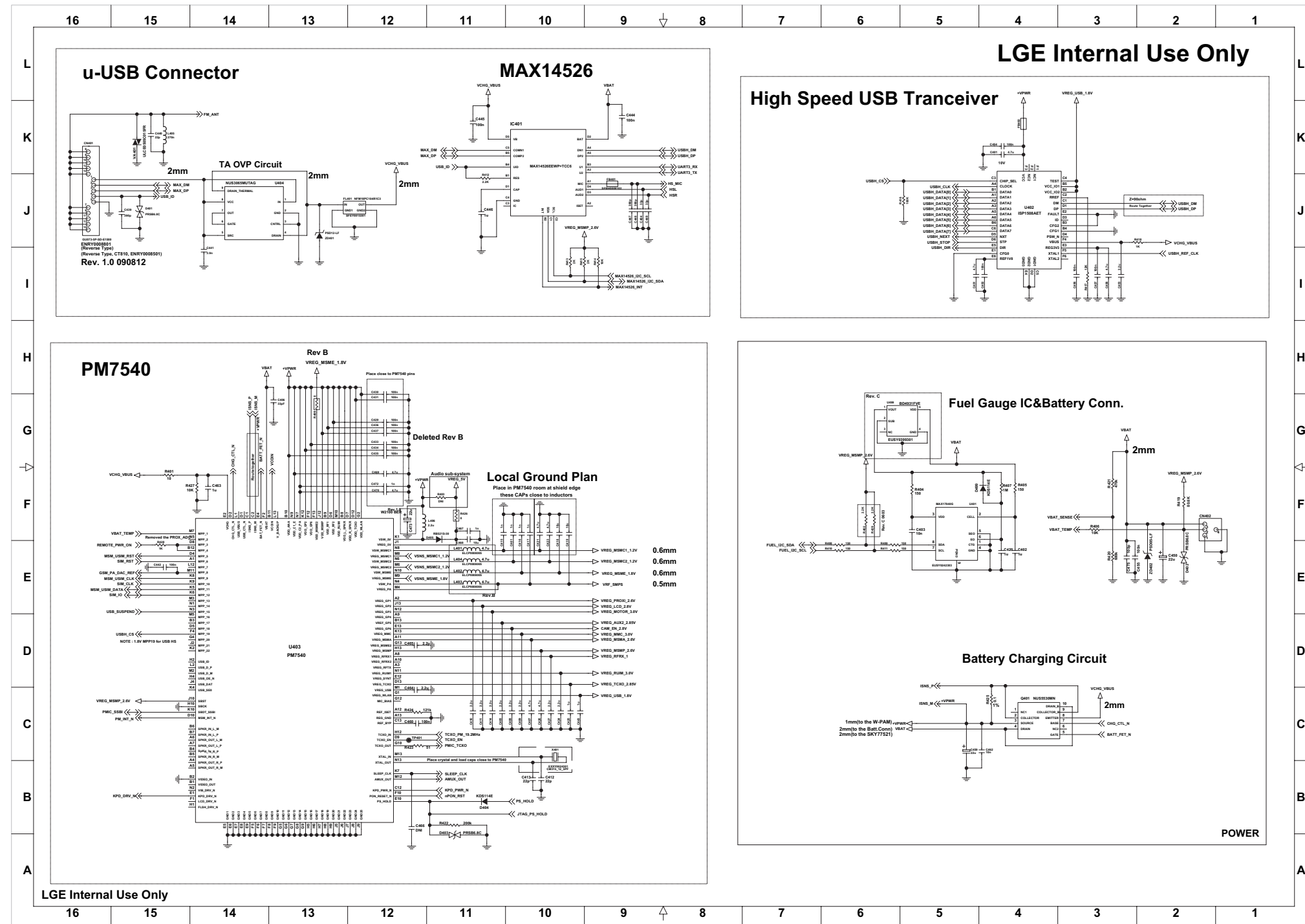
7. CIRCUIT DIAGRAM



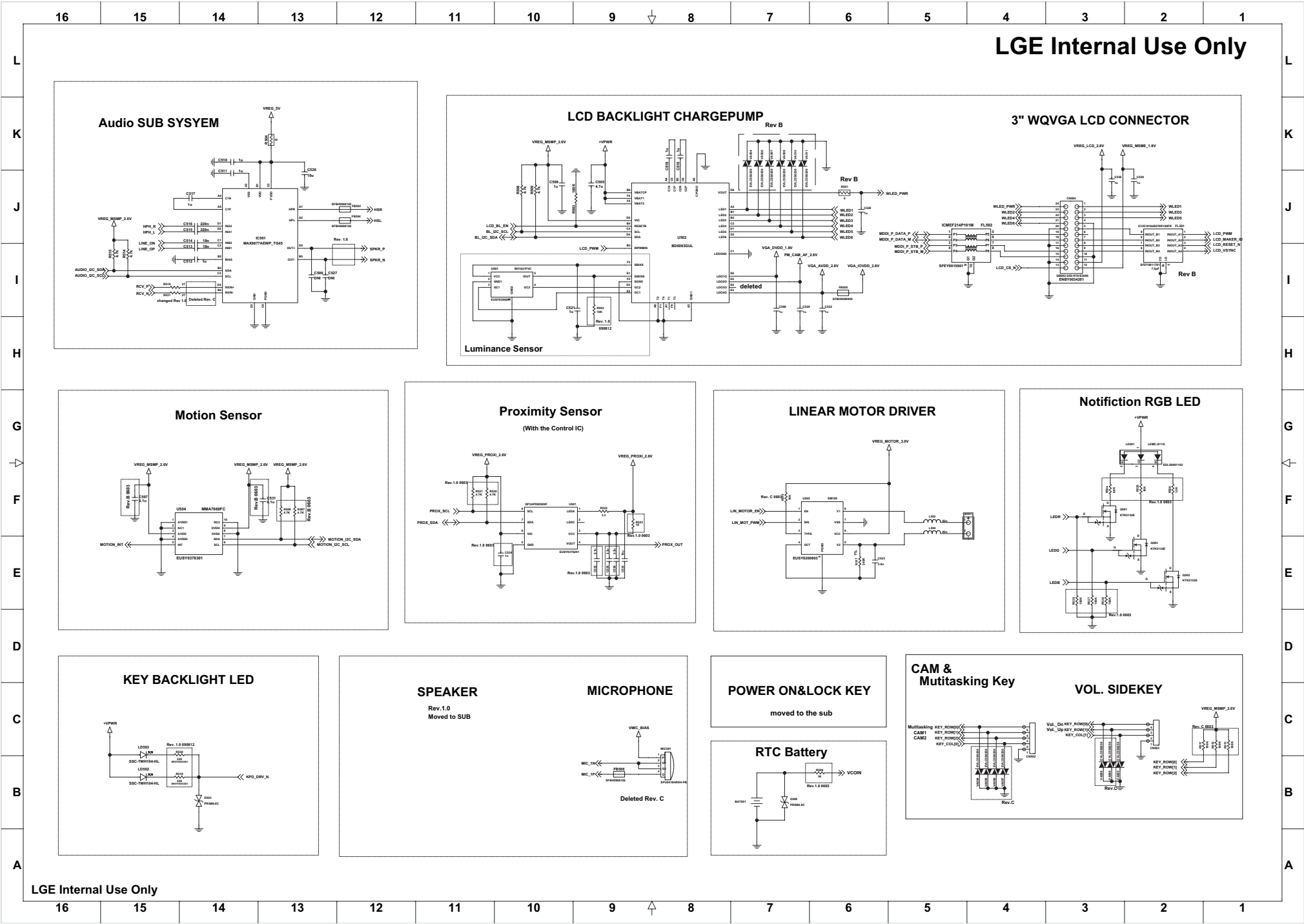
7. CIRCUIT DIAGRAM



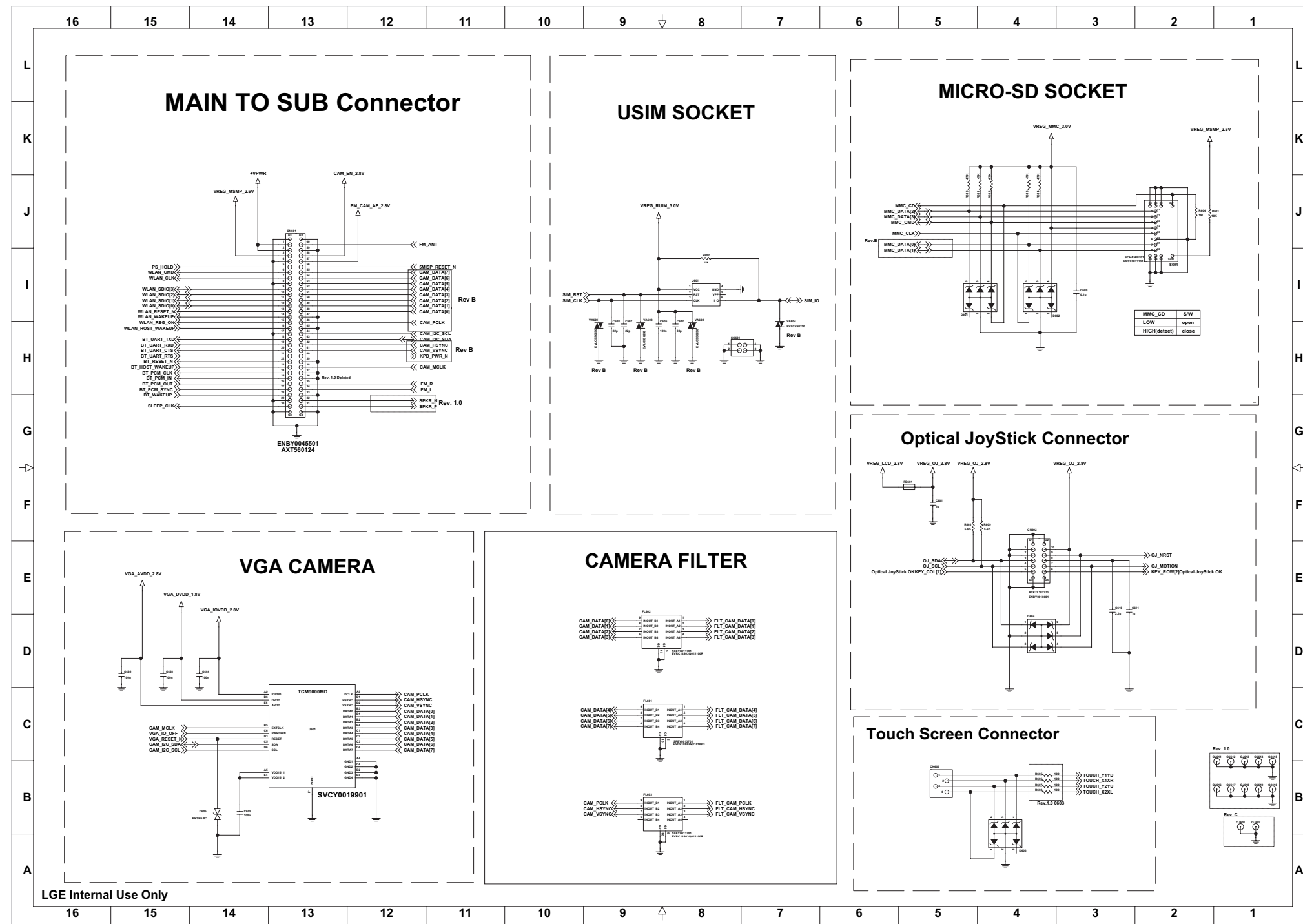
7. CIRCUIT DIAGRAM



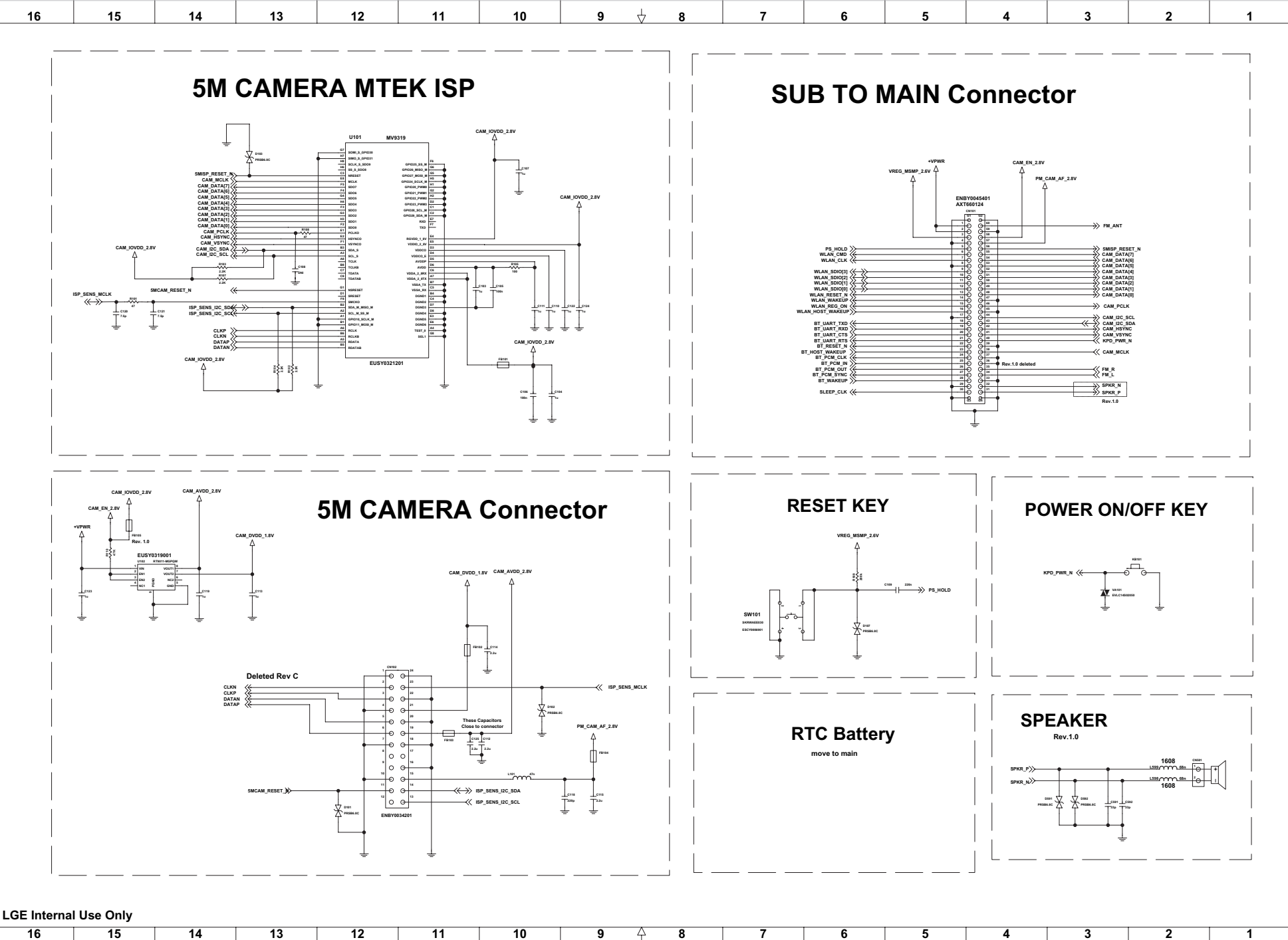
7. CIRCUIT DIAGRAM



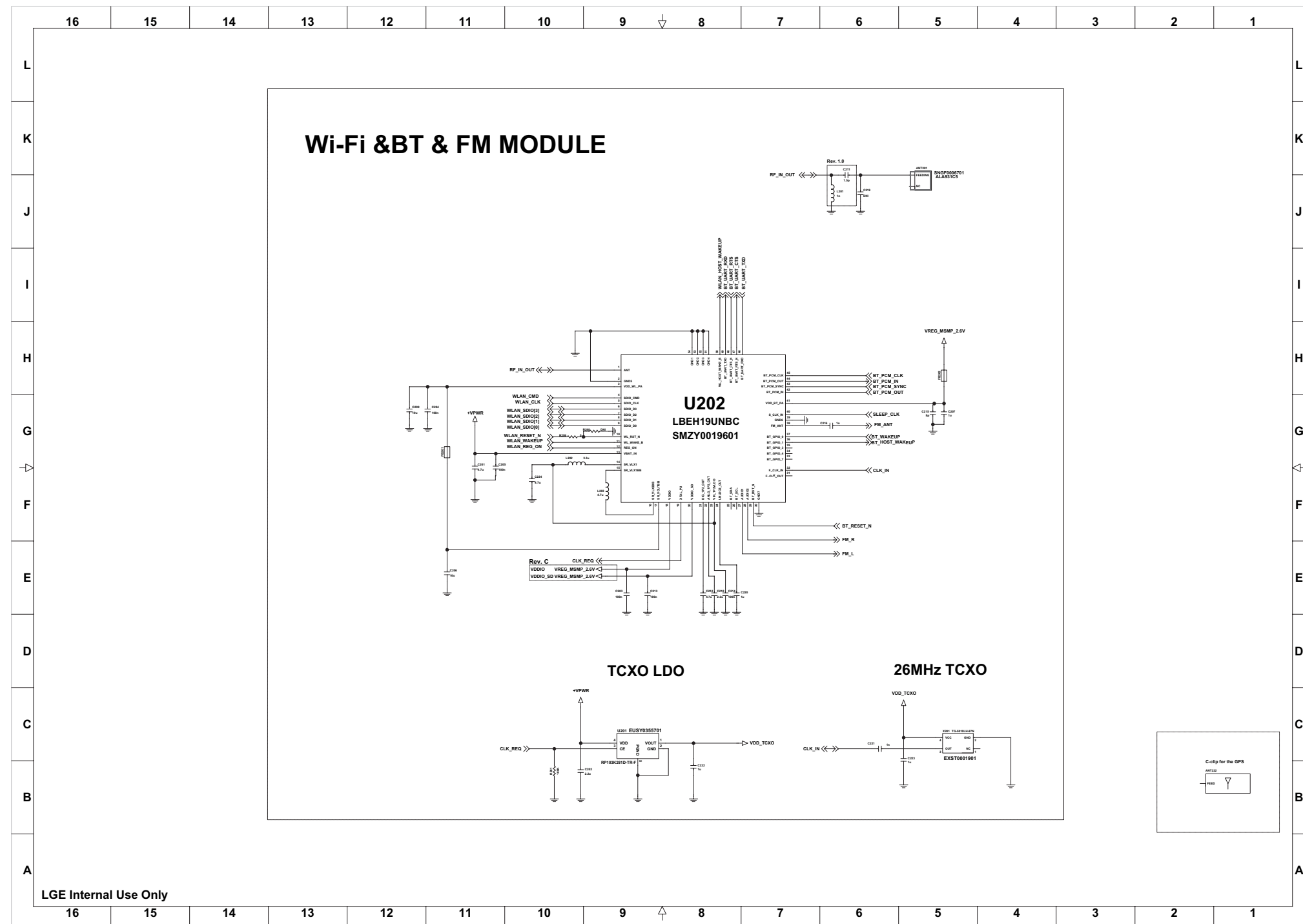
7. CIRCUIT DIAGRAM



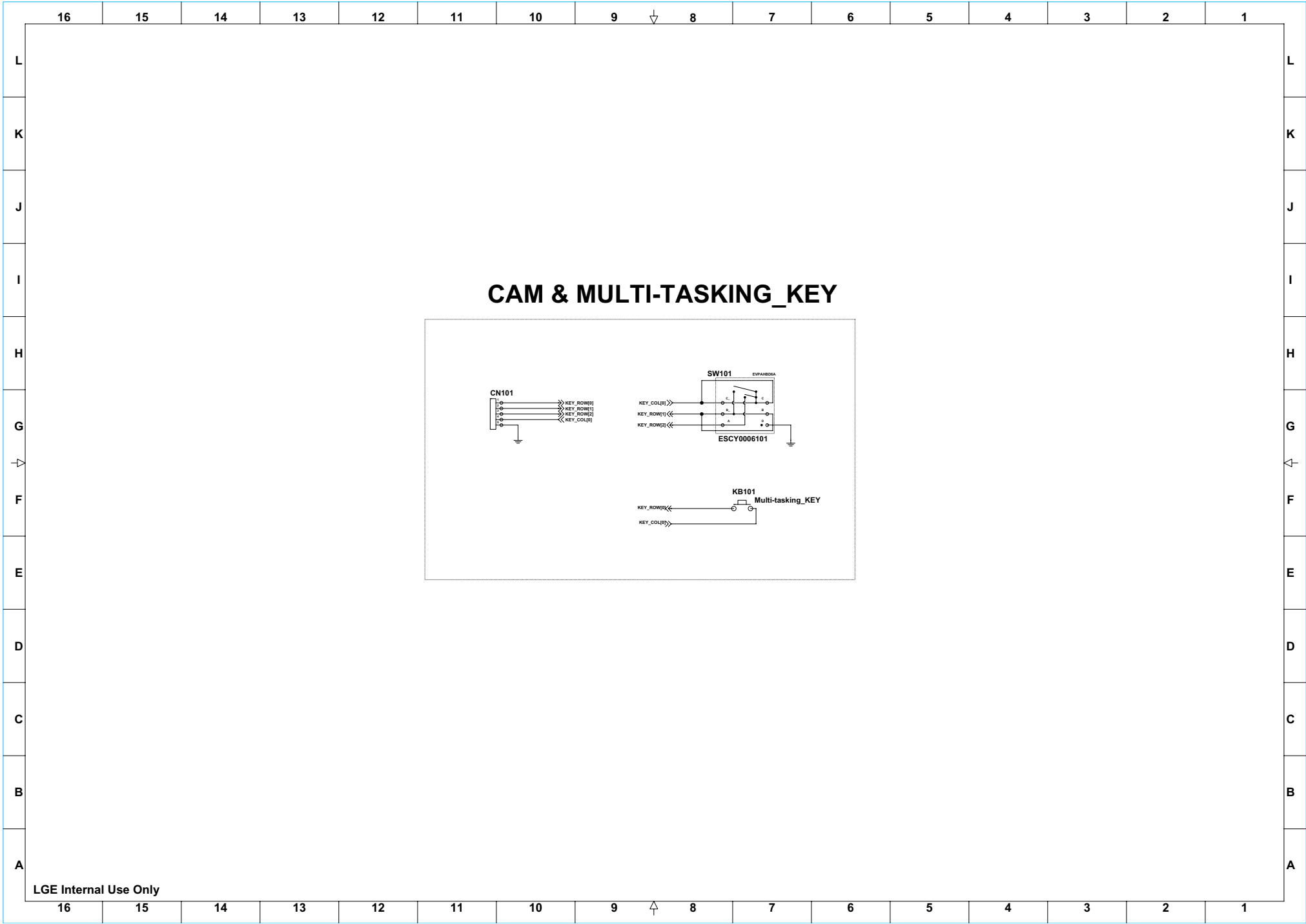
7. CIRCUIT DIAGRAM



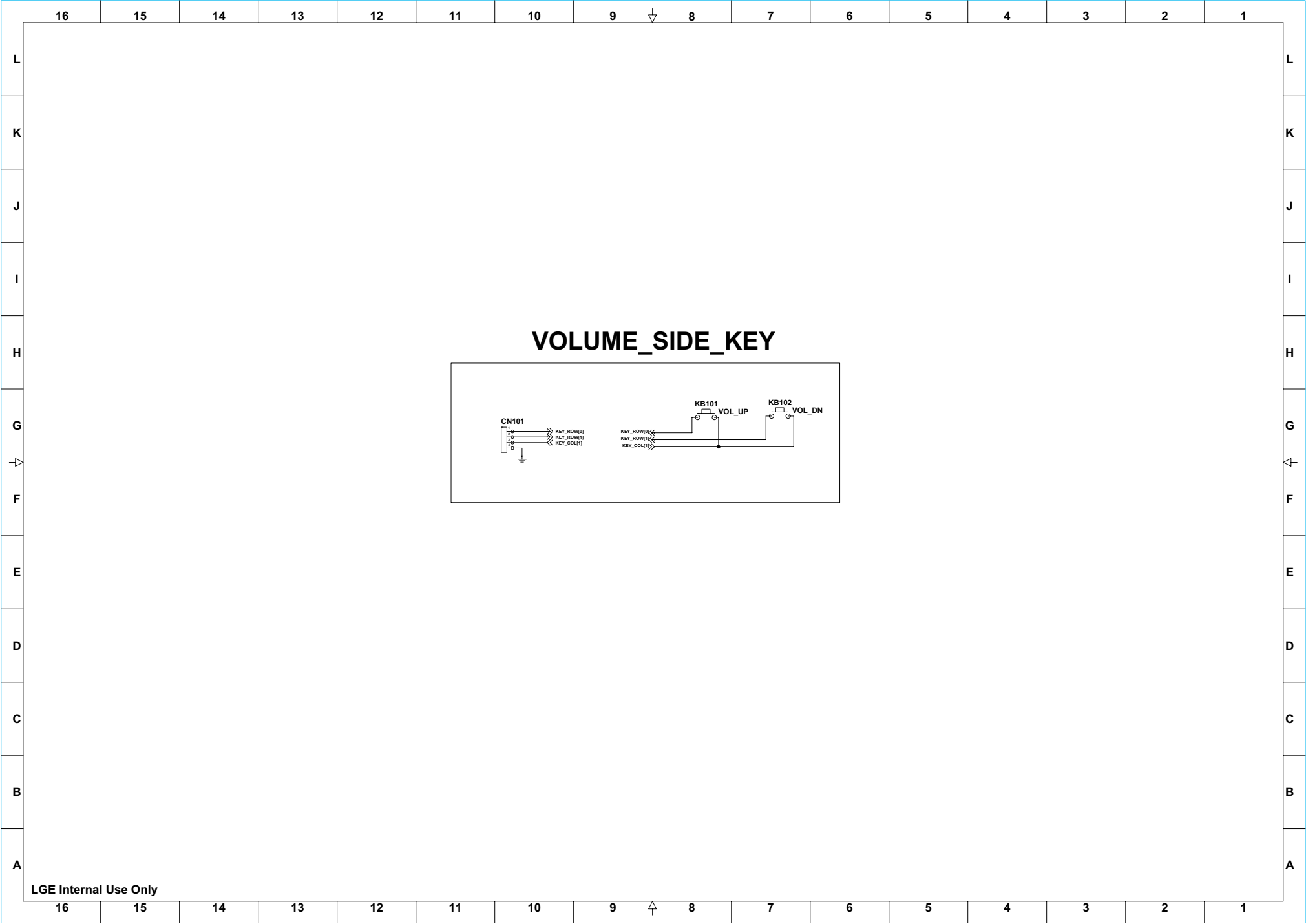
7. CIRCUIT DIAGRAM



7. CIRCUIT DIAGRAM

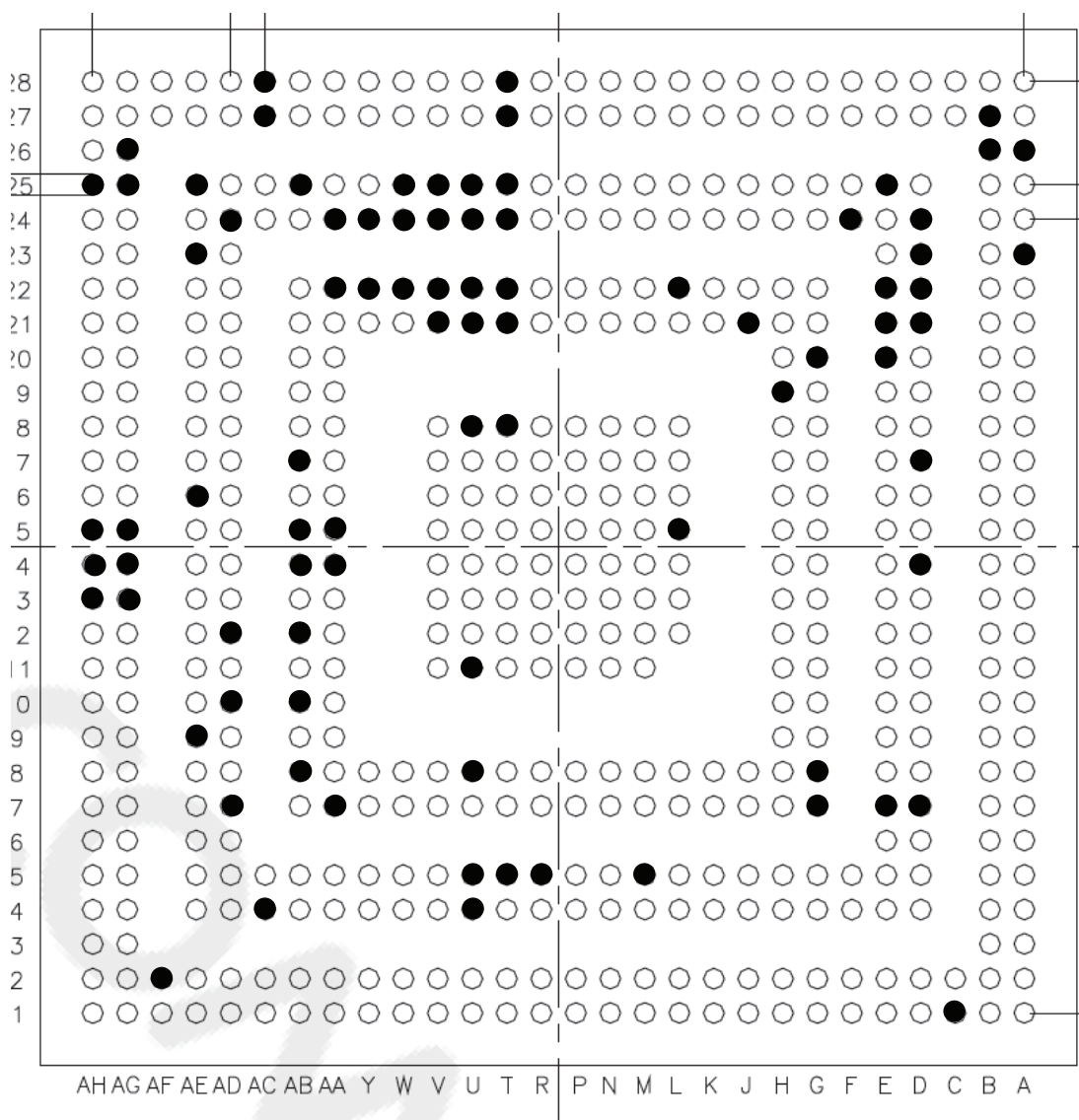


7. CIRCUIT DIAGRAM



8. BGA Pin Map

201 (EUSY0344203)



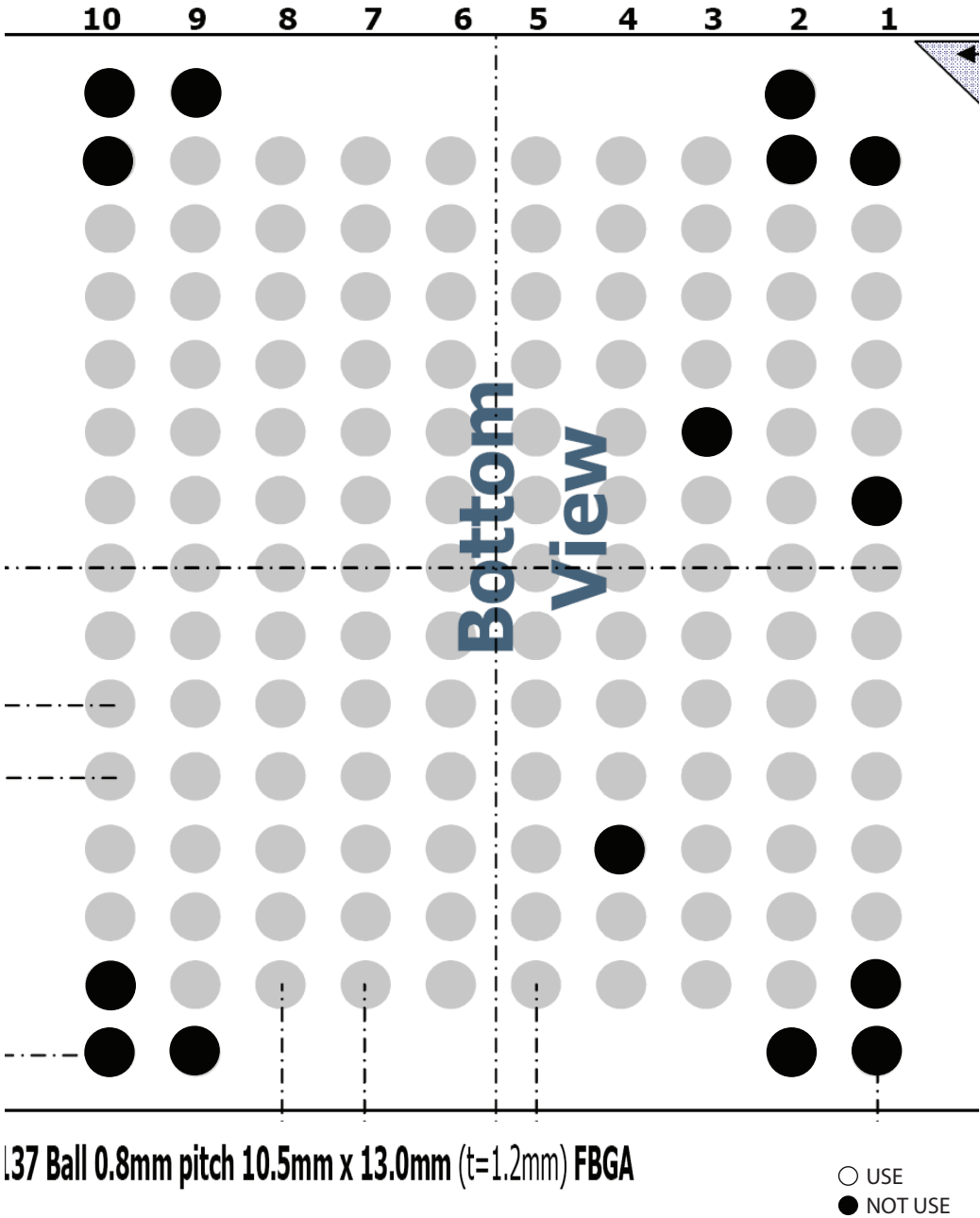
BOTTOM VIEW

13 CSP (15 × 15 × 1.4 mm)

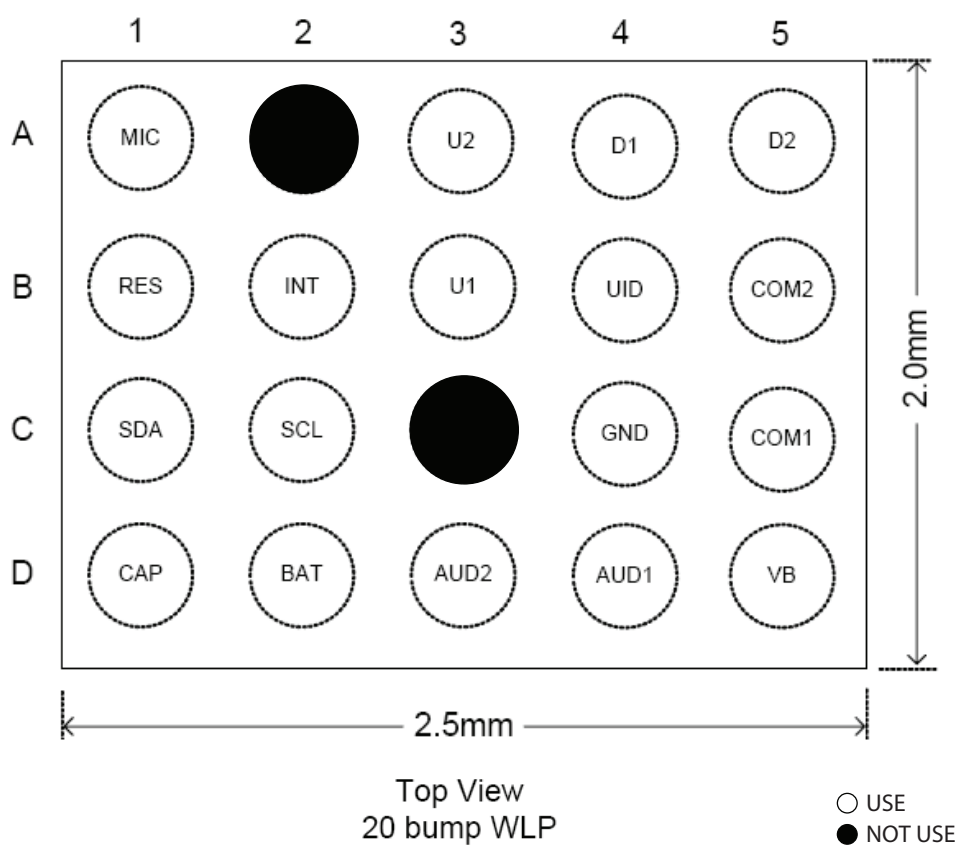
○ USE
● NOT USE

8. BGA Pin Map

302 (EUSY03363303)

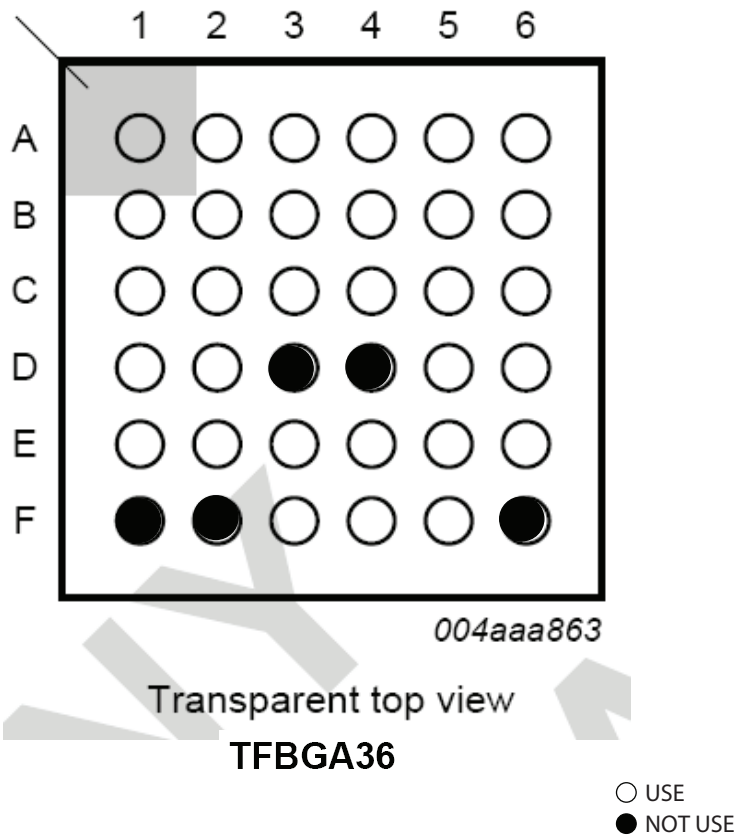


401 (EUSY0371201)

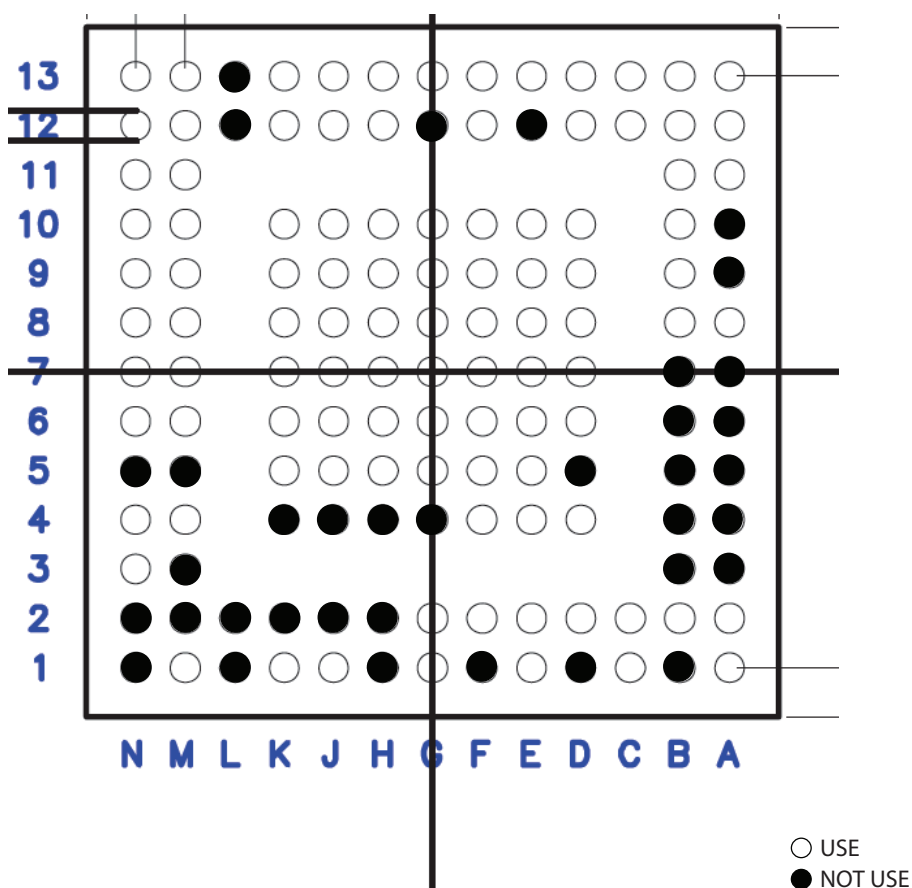


8. BGA Pin Map

402 (EUSY0320201)



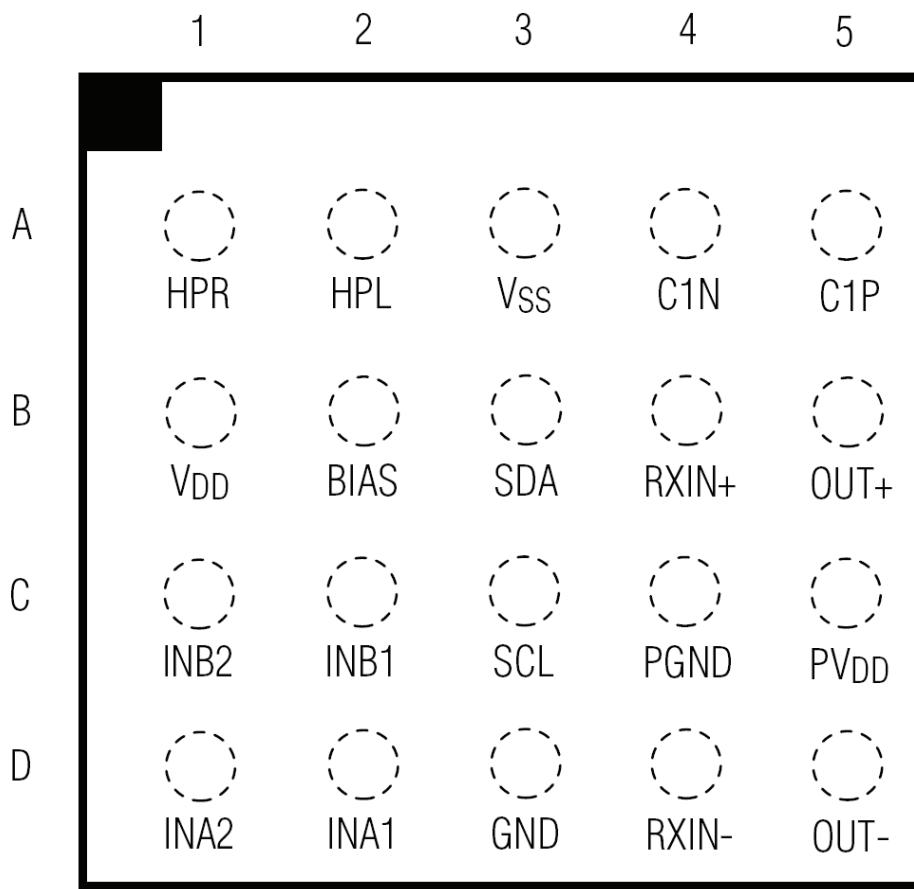
403 (EUSY0342201)

**BOTTOM VIEW**

8. BGA Pin Map

501 (EUSY0360201)

TOP VIEW
MP SIDE DOWN)

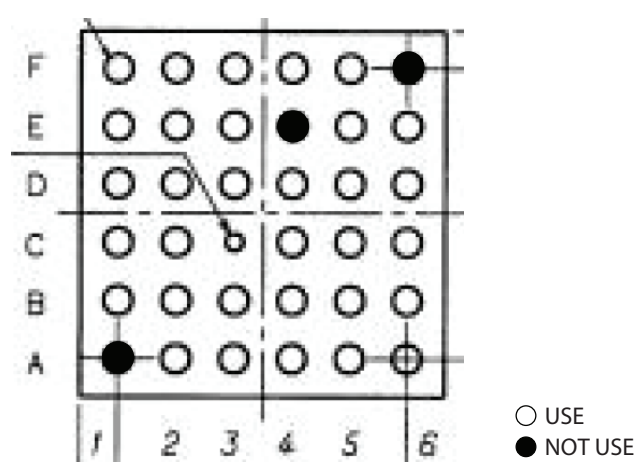


WLP

○ USE

502 (EUSY0383101)

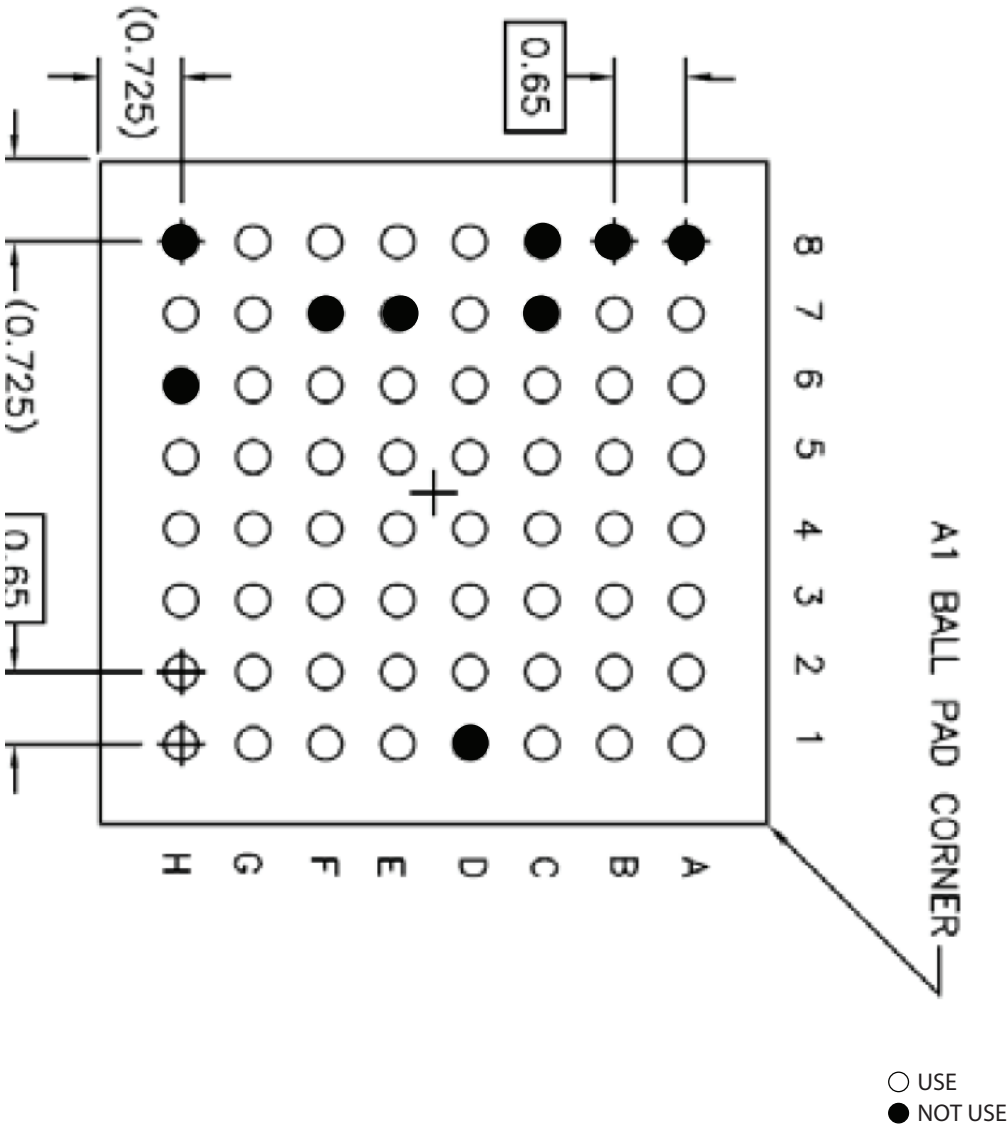
VCSP50L3 CSP small package



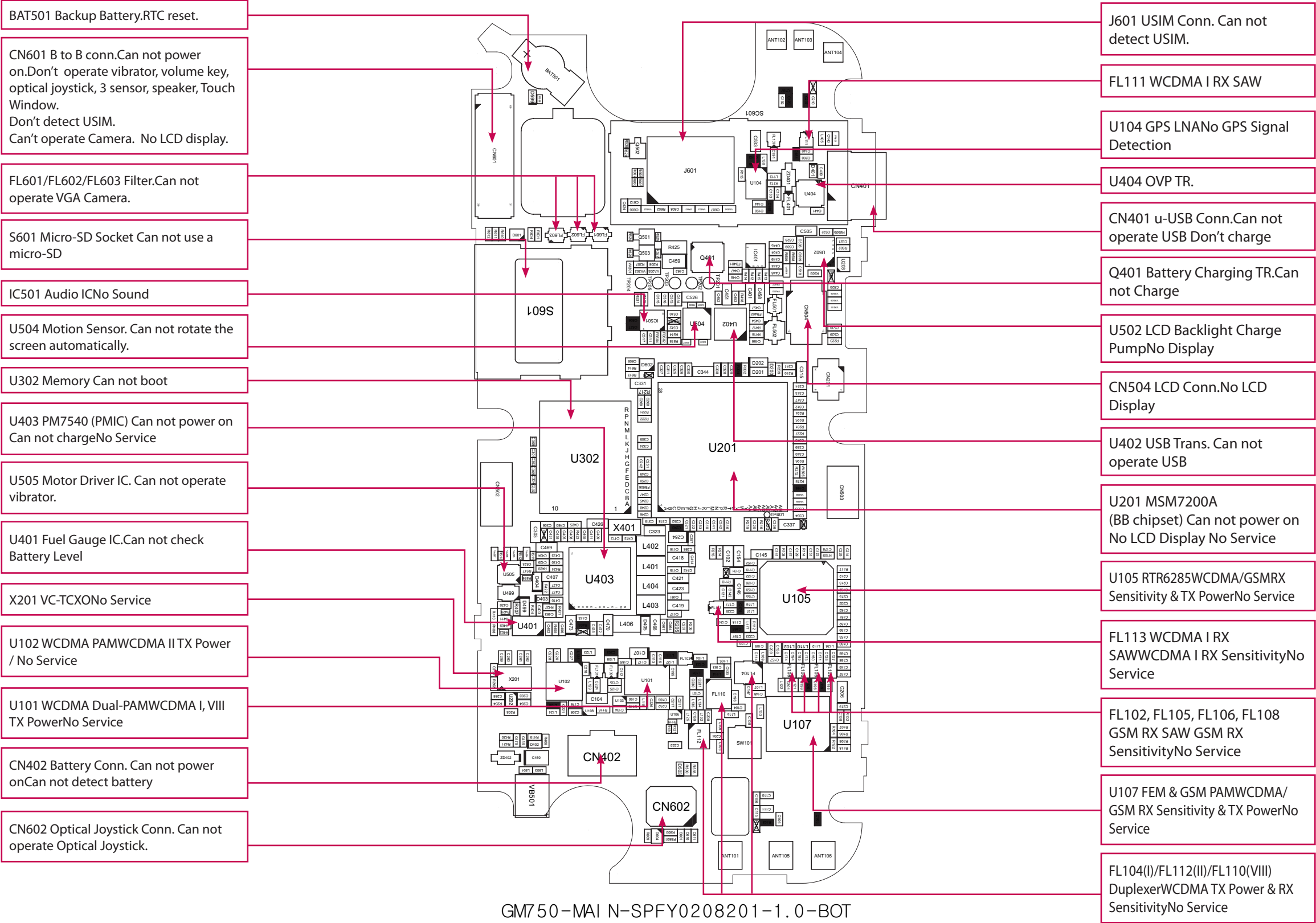
8. BGA Pin Map

101 (Sub/EUSY0321201)

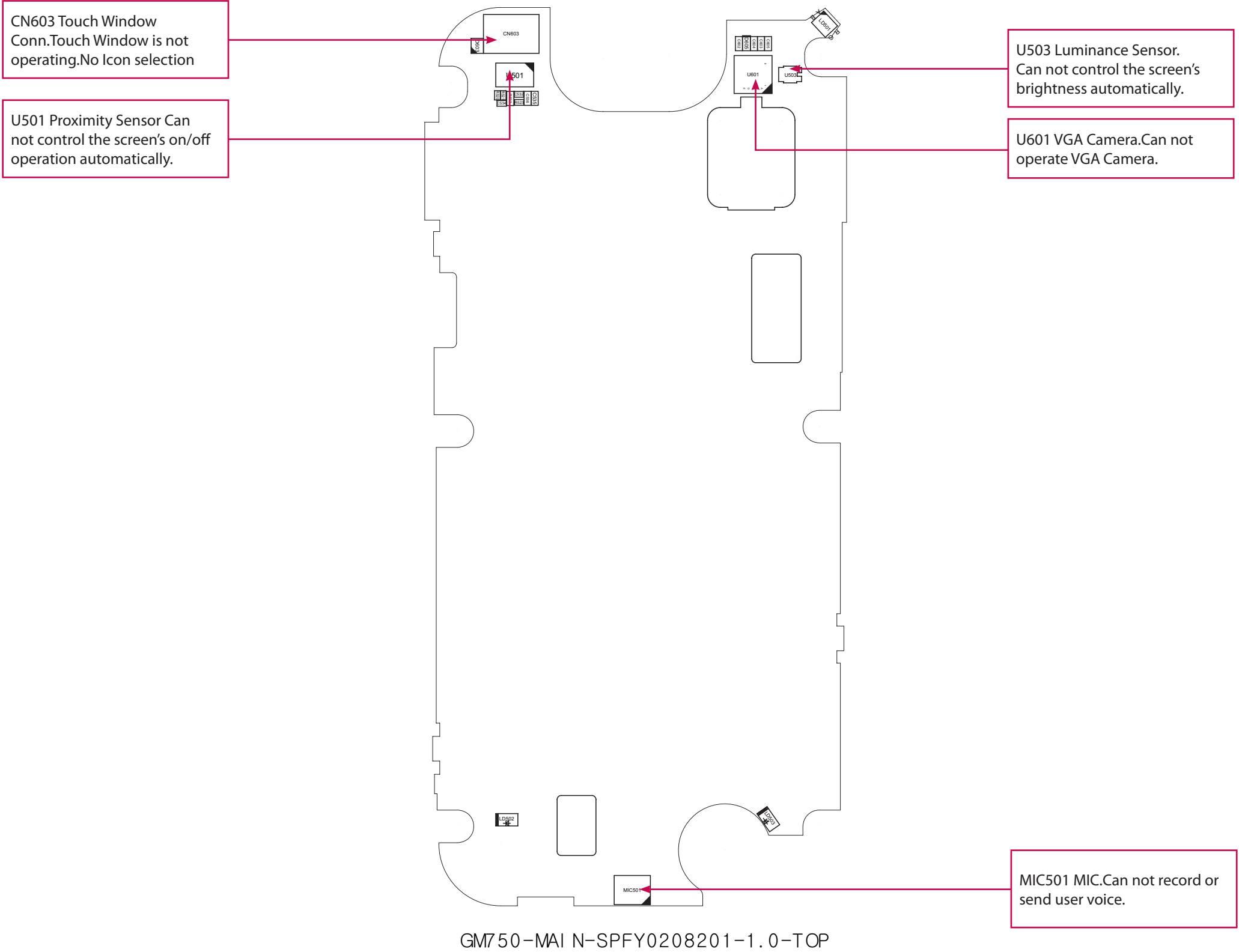
BOTTOM VIEW



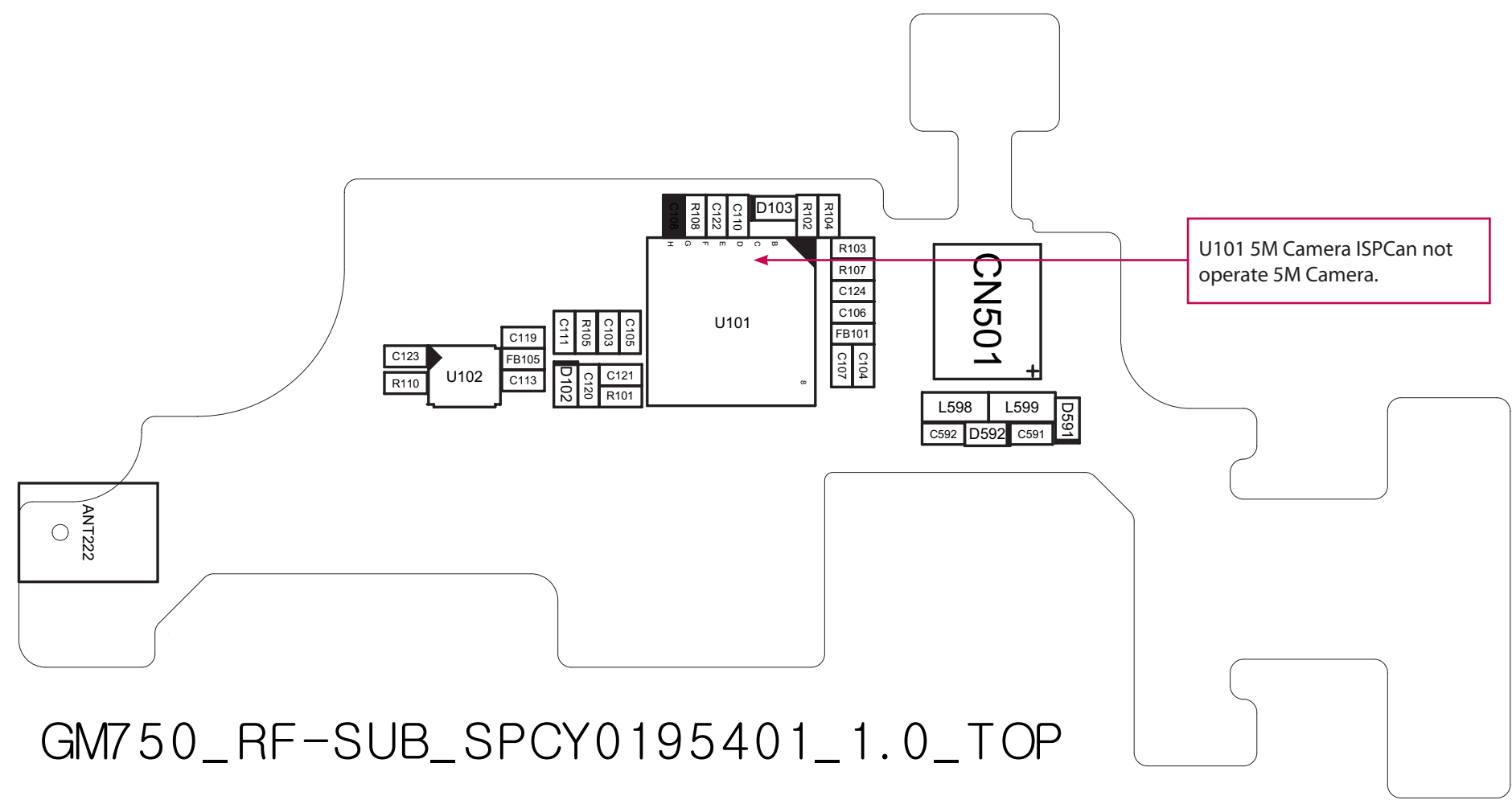
9. PCB LAYOUT



9. PCB LAYOUT



9. PCB LAYOUT

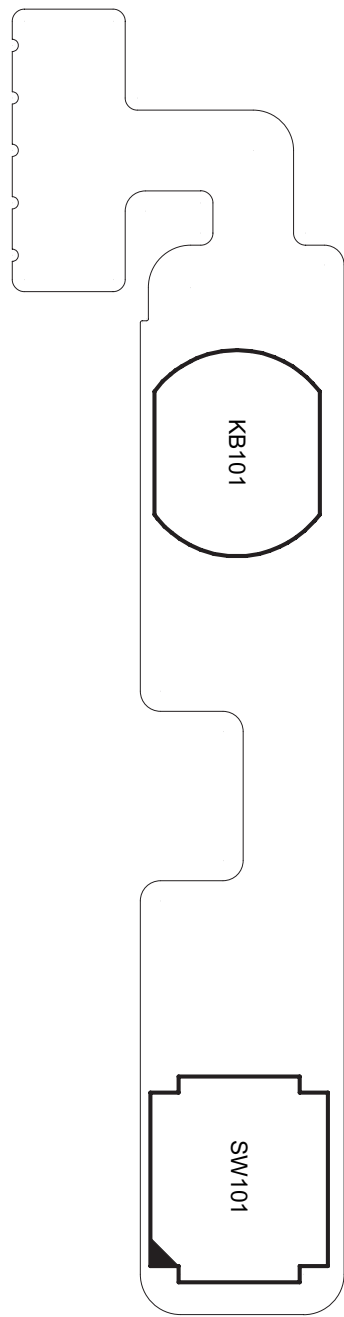


9. PCB LAYOUT



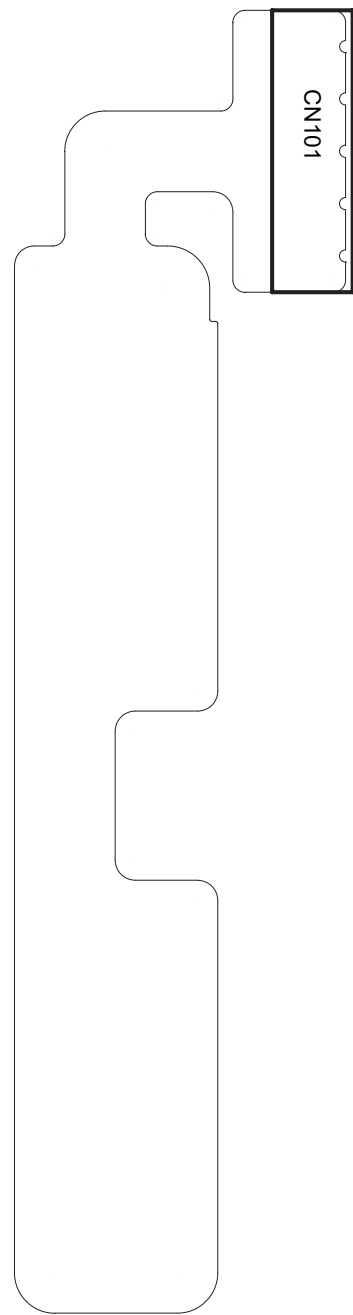
GM750_RF-SUB_SPCY0195401_1.0_BOT

9. PCB LAYOUT



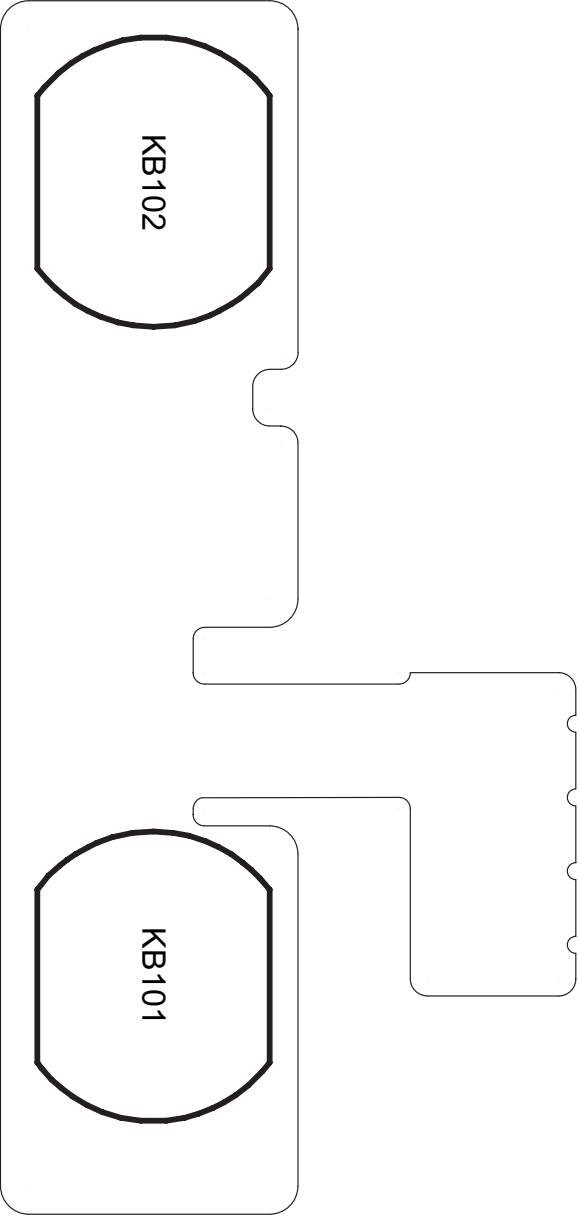
GM750_F_CAM_SPKY0078001_1.0_TOP

9. PCB LAYOUT



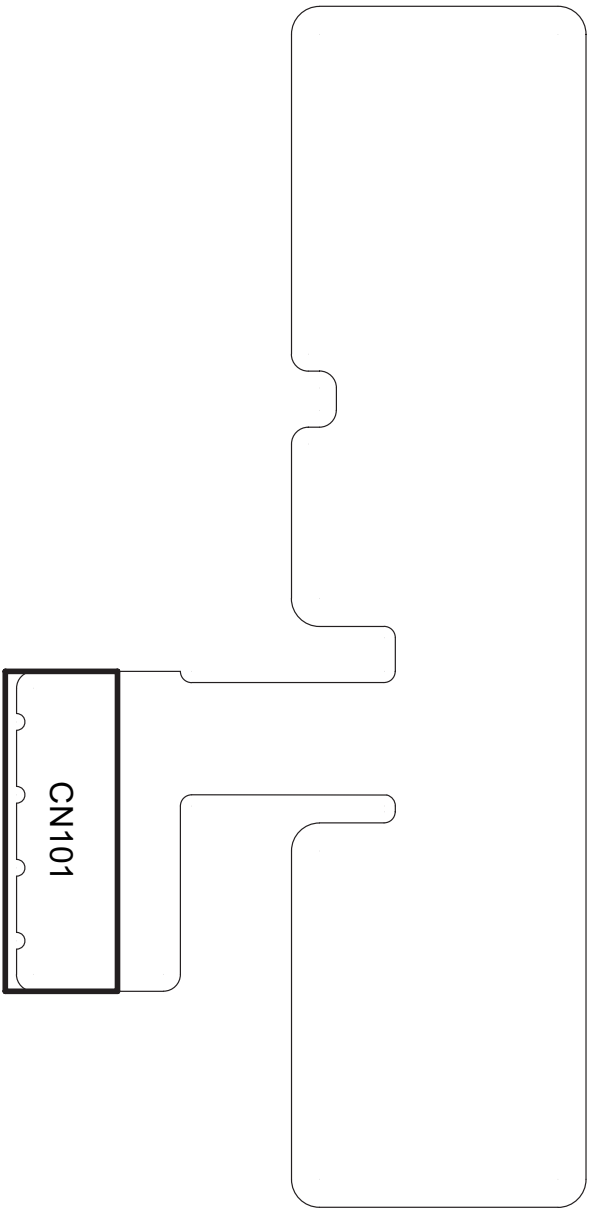
GM750_F_CAM_SPKY0078001_1.0_BOT

9. PCB LAYOUT



GM750_F_VOL_SPKY0078101_1.0_TOP

9. PCB LAYOUT



GM750_F_VOL_SPKY0078101_1.0_BOT

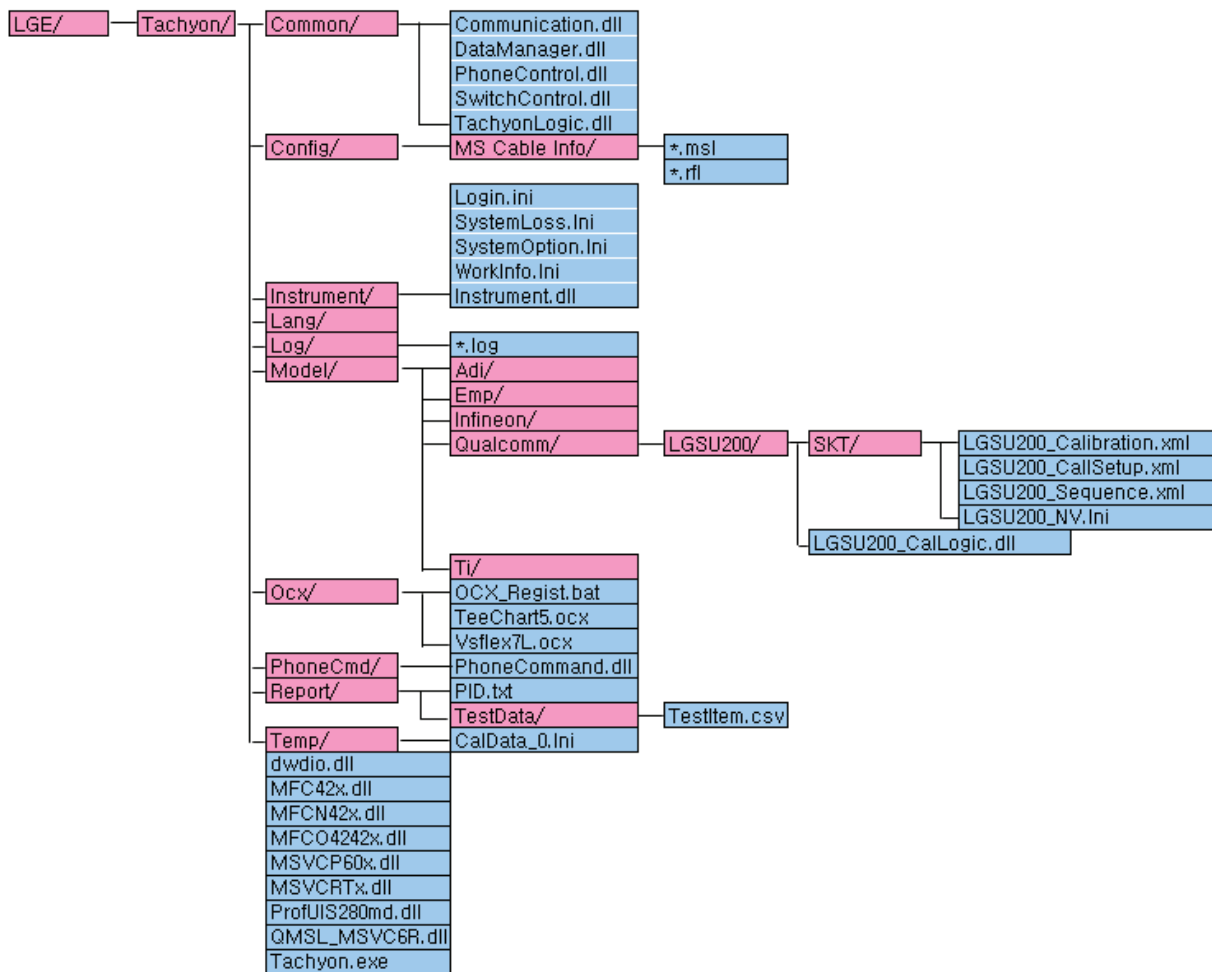
10. Calibration

10.1. Calibration & RF Auto Test Program (Tachyon)

1. Configuration of Tachyon
 - 1.1 Configuration of directory
 - 1.2 Description of basic folders
 - 1.3 Description of configuration files
2. How to use Tachyon
 - 2.1 Model selection
 - 2.2 Start cal & auto

10. Calibration

10.1.1 Configuration of directory



10.1.2 Description of basic folders

Folder	Description
Tachyon	Exe file and MFC dll, UI dll is present.
Common	Common dll files. (XML Data I/O , Auto Test Logic, Tachyon Logic Control, Communication)
Config	Envirement files. (Port configuration, Loss adjust)
Instrument	Tester control dll.
Model	Model files is present. (Model -> Solution (Qualcomm, EMP, ADI, INFINEON) -> MODEL NAME(LGGM630, LGSH470, ..) -> BUYER NAME(SKT, TEL, VIVO, ...)
OCX	Component files.
PhoneCmd	Phone communication file
Report	Report Files is present. (Cal data, test data)

10.1.3 Description of configuration files

File	Description
'MODEL NAME'_Calibration.XML	There are informations to calibrate. It consist of calibration items.
'MODEL NAME'_CallSetup.XML	There are informations to call.
'MODEL NAME'_NV.INI	It consists of default values. It is written when 'cal&auto' is begun.
'MODEL NAME'_Sequence.XML	It is described a testing procedures.

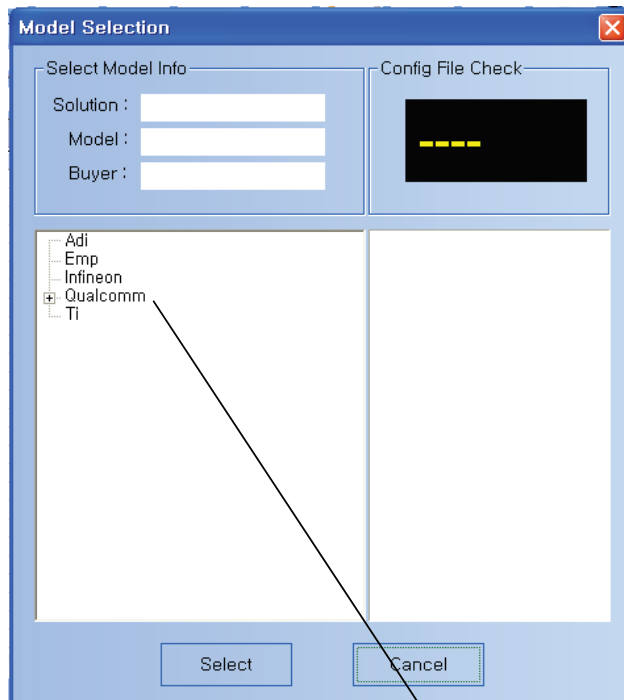
10. Calibration

10.2 How to use Tachyon

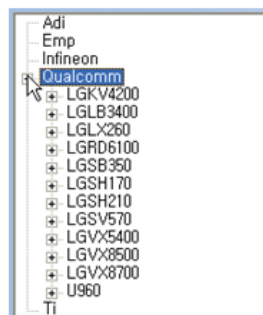
10.2.1 Model selection

Follow the procedure before start calibration & auto test

- a. Click the icon,  in tool bar.
Then, you can see the below screen

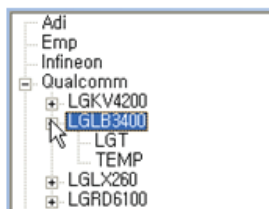
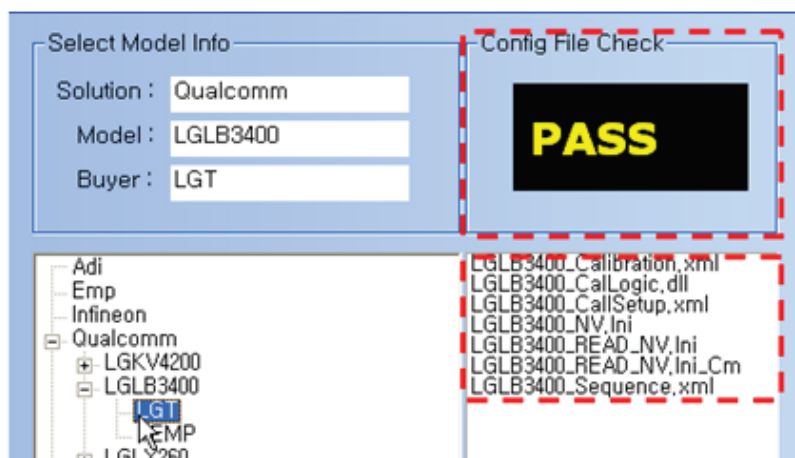


- b. Select the chipset “Qualcomm”



c. Select the model

You should select “GM750”

**d. Select the buyer (must be double clicked)****e. Click select button**

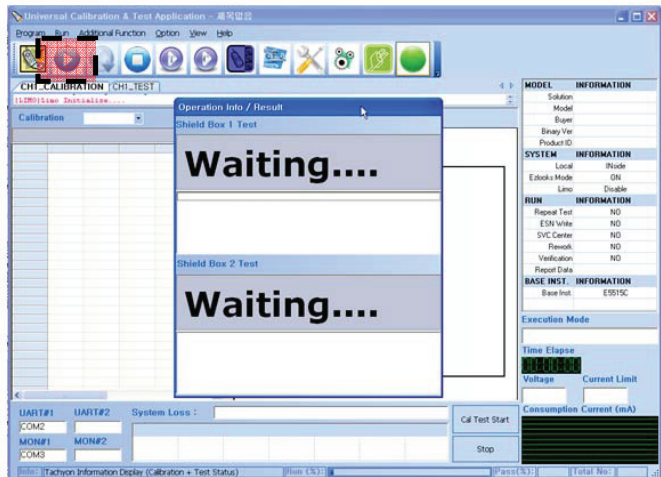
10. Calibration

10.2.2 Start cal & auto

a. Click calibration & auto test button,



in Tool bar



b. Calibration & autotest will be executed in order.

1) Precede Action.

- NV write
- Test command send.

2) Calibration

3) Auto test

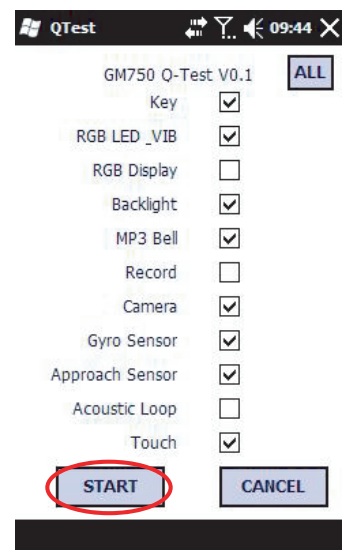
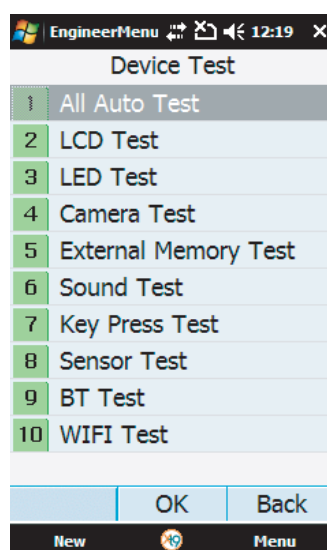
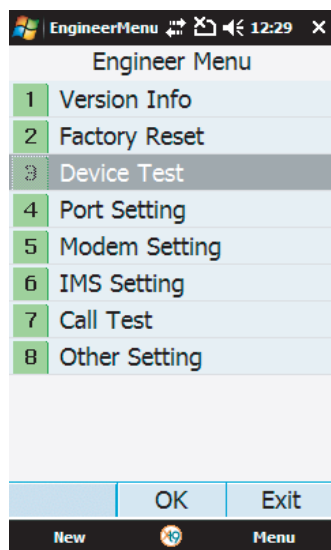
4) After action

- Phone reset
- Change UE to AMSS

11. Test Mode


Phone Test Mode _ GM750

1. Enter the Engineer Menu
2. Tap 3. Device Test
3. Tap 1. ALL Auto Test
4. Tap START (Phone Test Mode) Button.

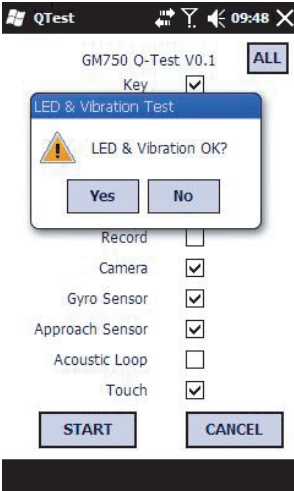


11. Test Mode

■ Phone Test Mode Scenario_ Smart Phone GM750 (1)


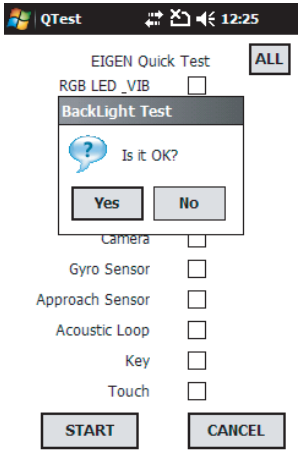


Item	Order	Description
(1) Key Test	① Tab Start Button	 <p>Press a key that red arrow indicate</p>
	② IF OK, tab "YES" button	<p>< Caution > At Optical Mouse check, Rub to reverse direction of red arrow</p>

■ Phone Test Mode Scenario_ Smart Phone GM750 (2)

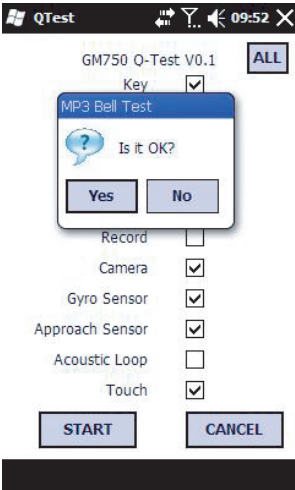
Item	Order	Description
(2) LED & Vibration Test	① Tab Start Button	 <p><LED SIDE> 1) Red LED On 2) Red LED Off 3) Green LED On 4) Green LED Off 5) Blue LED On 6) Blue LED Off Step 1-6 are repeated</p> <p><Vibrator SIDE> 1) Vibrator On 2) Vibrator Off Step 1-2 are repeated</p> <p>LED test and Vibrator Test are concurrently operated</p>
	② If OK, tab "YES" button	

11. Test Mode

■ Phone Test Mode Scenario_ Smart Phone GM750 (3)

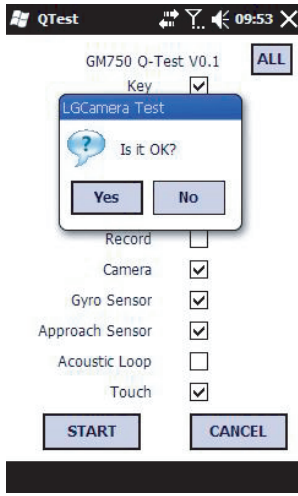
Item	Order	Description
(3) Backlight Test	① Backlight Test Start	 
	② IF OK, tab "YES" button	  <p>1) Dark -> Little Dark -> Bright This operation is executed at two times 2) Put a finger over the sensor and Wait for about 10 sec</p>

■ Phone Test Mode Scenario_ Smart Phone GM750 (4)

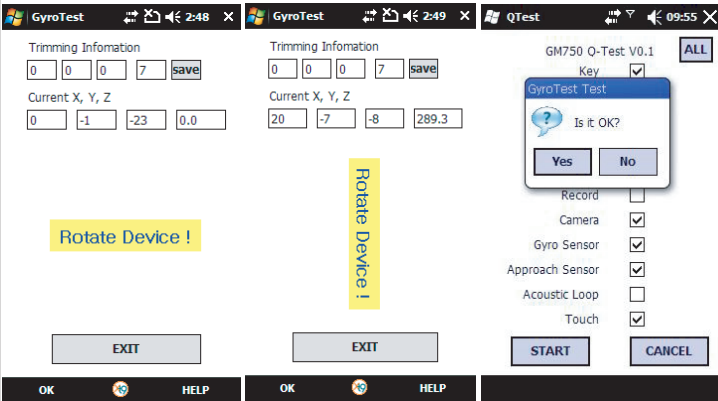
Item	Order	Description
(4) MP3 Bell Test	① MP3 Bell Test Start	
	② IF OK, tab "YES" button	<p>Ringtone (MP3) is played regularly</p>

11. Test Mode

■ Phone Test Mode Scenario_ Smart Phone GM750 (5)

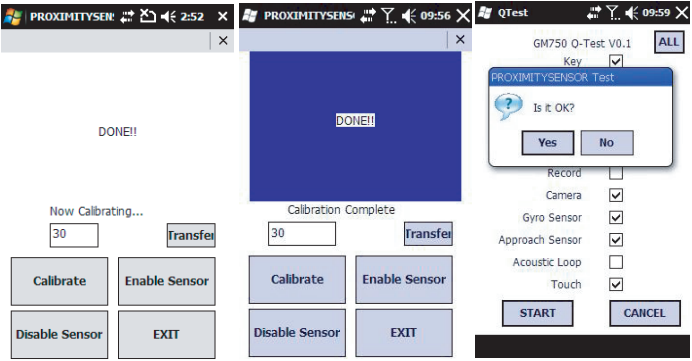
Item	Order	Description
(5) Camera Test	<p>① Tab Start Button</p> <p>② IF OK, tab "YES" button</p>	<div></div> <ol style="list-style-type: none">1) Inner camera preview is displayed2) Press camera button then the captured scene is displayed3) Press Send button then outer camera preview is displayed4) Press camera button then the captured scene is displayed5) Press Send button then Video camera preview is displayed, Recording starts automatically.6) And then the recorded scene is displayed.

■ Phone Test Mode Scenario_ Smart Phone GM750 (6)


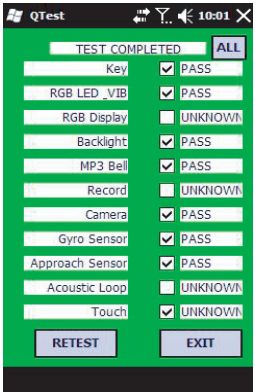
Item	Order	Description
(6) Gyro Sensor Test	① Tab Start Button	
	② IF OK, tab "YES" button	<div>1) Rotate the device</div> <div>2) "Rotate Device !" is moved.</div> <div>3) Rotate again and wait for a while</div>

11. Test Mode

■ Phone Test Mode Scenario_ Smart Phone GM750 (7)

Item	Order	Description
(7) Approach Sensor Test	① Tab Start Button	
	② IF OK, tab "YES" button	<ol style="list-style-type: none"> 1) Press calibrate button the it is initialized 2) Put a finger over the sensor and then LCD displayed is turned off

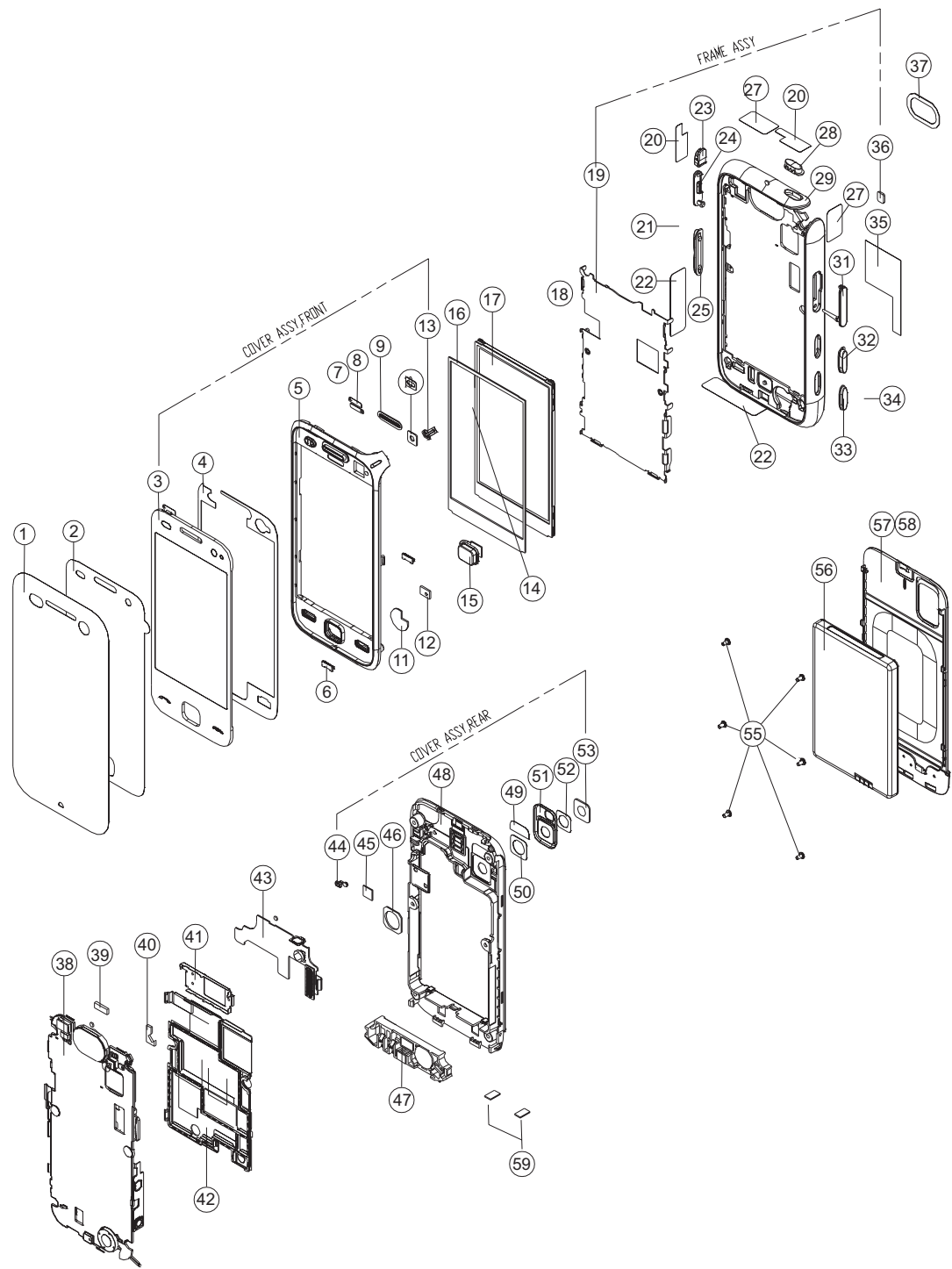
■ Phone Test Mode Scenario_ Smart Phone GM750 (8)

Item	Order	Description
(8) Touch Test	① Tab Start Button	<div></div>
	② IF OK, tab "YES" button	<div><div></div><div>1) This notes is displayed</div><div>2) Tab OK button to exit</div></div>



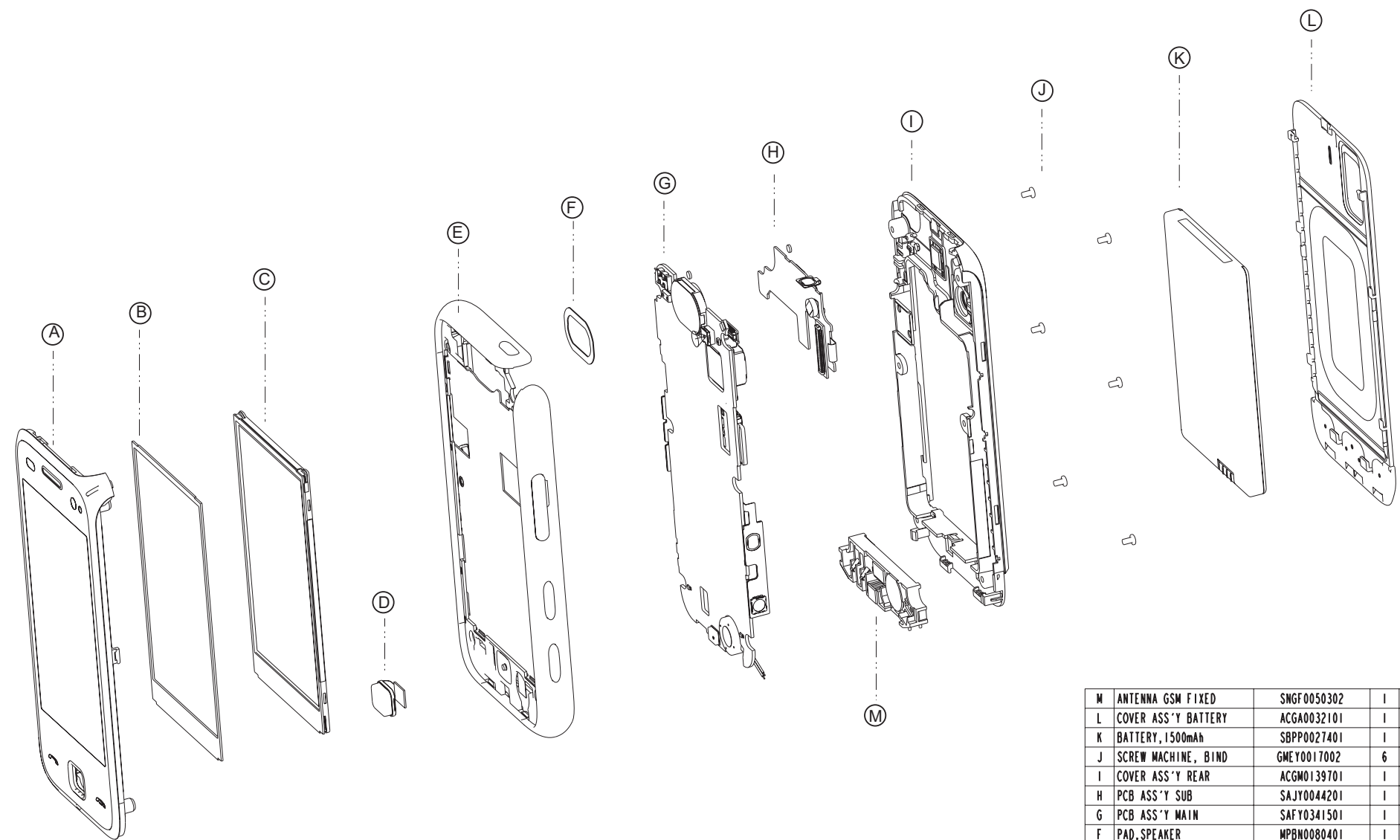
12. EXPLODED VIEW & REPLACEMENT PART LIST

12.1 EXPLODED VIEW



59	PAD ANTENNA	MPBZ0266501	2	
58	TAPE, PROTECTION(COVER, BATTERY)	MTAB0335201	1	
57	COVER, BATTERY	ACGA0032101	1	
56	BATTERY	SBPP0027401	1	
55	SCREW MACHINE BIND	GMEY001201	4	
54	SCREW MACHINE BIND	GMEY0017002	6	??? 2?? 6?? ??
53	WINDOW, CAMERA	MWAE0051401	1	
52	TAPE, WINDOW(SUB)(SM CAMERA)	MTAE0039701	1	
51	DECO, CAMERA	MDAD0049801	1	
50	TAPE, DECO(SM CAMERA) SUB	MTAA0207501	1	
49	TAPE, DECO(SM CAMERA)	MTAA0201901	1	
48	COVER, REAR	MCJN0108101	1	
47	ANTENNA, GSM, FIXED	SNGF0050302	1	
46	PAD, CAMERA(SM)	MPBT0081501	1	
45	PAD, REAR COVER	MPBZ0252601	1	
44	BUTTON, SIDE[RESET]	MBJL0098101	1	
43	PCB ASSY SUB	SAJY0044201	1	
42	SHIELD CAN ASSY(MAIN PCB)	ACKA0019001	1	
41	SHIELD CAN(SIM SOCKET)	MCBA0056801	1	
40	PAD, PROTECTION(VGA)	MPBZ0254001	1	
39	PAD, PROTECTION(TOUCH CONNECTOR)	MPBZ0253901	1	
38	PCB ASSY MAIN	SAFY0341501	1	
37	PAD, SPEAKER	MPBN0080401	1	
36	GASKET, SM CAMERA	MPBT0086901	1	
35	GASKET, LCD(MIDDLE FRAME)	MTAZ0267001	1	
34	TAPE, PROTECTION(CAMERA KEY)	MTAB0334501	1	
33	BUTTON, SIDE(CAMERA)	MBJL0098001	1	
32	BUTTON, SIDE(MULTITASKING)	MBJL0098201	1	
31	CAP, MULTIMEDIA CARD	MCCG0021801	1	
29	COVER, MIDDLE SIDE	MCJZ0060301	1	
28	BUTTON, SIDE(POWER)	MBJL0097901	1	
27	TAPE, PROTECTION (DECO BOTTOM, LEFT)	MTAB0359101	2	
25	BUTTON, SIDE(VOLUME)	MBJL0097801	1	
24	CAP, RECEPTACLE	MCCE0053601	1	
23	HANDSTRAP	MDAC0028501	1	
22	TAPE, PROTECTION (DECO BOTTOM, LEFT)	MTAB0630101	2	
21	TAPE, PROTECTION(VOLUME KEY)	MTAB0334701	1	
20	TAPE, PROTECTION(HANDSTRAP, POWER KEY)	MTAA0201801	2	
19	FRAME ASSY (MIDDLE SIDE LCD)	AFBZ0016301	1	
18	TAPE, ESD(LCD)	MTAZ0264301	1	
17	LCD, 3.0" QVGA	SVLM0034801	1	
16	PAD, LCD	MPBG0097701	1	
15	OPTICAL JOYSTICK	SMZY0022601	1	
14	TAPE, ESD(LED)	MTAZ0263601	1	
13	INDICATOR, LED(POWER)	MJAA0027601	1	
12	PAD, MIC	MPBH0051001	1	
11	PAD, MOTOR	MPBJ0071101	1	
10	PAD, CAMERA(VGA)	MPBT0081401	1	
9	FILTER, SPEAKER	MBB0033301	1	
8	TAPE, TOUCH WINDOW FPCB	MTAJ0024301	1	
7	TAPE, TOUCH WINDOW FPCB SUB	MTAZ0265101	1	
6	INDICATOR, LED(KEY)	MJAA0027701	2	
5	COVER, FRONT	MCJK0112301	1	
4	TAPE, TOUCH WINDOW	MTAD0112901	1	
3	TOUCH WINDOW	MWAC0126501	1	
2	TAPE, PROTECTION WINDOW	MTAB0335001	1	
1	TAPE, PROTECTION PHONE	MTAB0351501	1	
No	Part Name	Part Number	Q'ty	Remark

ASS'Y EXPLODED VIEW



M	ANTENNA GSM FIXED	SNGF0050302	I	
L	COVER ASS'Y BATTERY	ACGA0032101	I	
K	BATTERY, 1500mAh	SBPP0027401	I	
J	SCREW MACHINE, BIND	GMEY0017002	6	M1.4 X L2.3 SCREW
I	COVER ASS'Y REAR	ACGM0139701	I	
H	PCB ASS'Y SUB	SAJY0044201	I	
G	PCB ASS'Y MAIN	SAFY0341501	I	
F	PAD, SPEAKER	MPBN0080401	I	
E	FRAME ASS'Y [MIDDLE SIDE]	AFBZ0014101	I	
D	OPTICAL JOYSTICK	SMZY0022601	I	
C	LCD, 3.0 QVGA	SVLM0034801	I	
B	PAD, LCD	MPBG0097701	I	
A	COVER ASS'Y FRONT	ACGK0142301	I	
NO.	PART NAME	PART NUMBER	QTY	REMARK

12. EXPLODED VIEW & REPLACEMENT PART LIST

12.2 Replacement Parts <Mechanic component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
2	AAAY00	ADDITION	AAAY0426001		WITHOUT COLOR	
3	ACGA00	COVER ASSY,BATTERY	ACGA0032101		TITANIUM	L, 57
4	MCJA00	COVER,BATTERY	MCJA0095601	MOLD, PC LUPOY SC-1004ML, , , , ,	TITANIUM	
4	MCJA01	COVER,BATTERY	MCJA0095701	MOLD, PC LUPOY SC-1004ML, , , , ,	TITANIUM	
4	MTAB00	TAPE,PROTECTION	MTAB0335201	COMPLEX, (empty), , , , ,	WITHOUT COLOR	58
3	AMBA00	MANUAL ASSY,OPERATION	AMBA0165103	GM750 manual assy for VDF	WITHOUT COLOR	
4	MMBB00	MANUAL,OPERATION	MMBB0355803	PRINTING, (empty), , , , ,	WITHOUT COLOR	
2	APAY00	PACKAGE	APAY0131624	GM750 VDF(VDF T2 UB/VDF Seal/400ea/9501_PA)	WITHOUT COLOR	
3	APLY00	PALLET ASSY	APLY0003602	T2 VDF(Body/9501/400ea) Pallet Assy	WITHOUT COLOR	
4	MCJZ00	COVER	MCJZ0030503	1156*736*105(TDR2-1200*800)-B	Without Color	
4	MPCY00	PALLET	MPCY0009501	PALLET(G7100 for Orange UK_EUR)	BLACK	
3	MBAD00	BAG,VINYL(PE)	MBAD0005204	COMPLEX, (empty), , , , ,	Without Color	
3	MLAC00	LABEL,BARCODE	MLAC0004541	PRINTING, (empty), , , , ,	Without Color	
3	MLAZ00	LABEL	MLAZ0050901	PRINTING, (empty), , , , ,	WITHOUT COLOR	
3	MPAE00	PACKING,BLISTER	MPAE0007808	COMPLEX, (empty), , , , ,	RED	
2	APEY00	PHONE	APEY0839901		BLACK	
3	ACGM00	COVER ASSY,REAR	ACGM0139701		TITANIUM	I
4	MBJL00	BUTTON,SIDE	MBJL0098101	MOLD, PC LUPOY SC-1004ML, , , , ,	RED	44
4	MCJN00	COVER,REAR	MCJN0108101	MOLD, PC LUPOY SC-2302, , , , ,	TITANIUM	48
5	MCBA00	CAN,SHIELD	MCBA0056501	PRESS, STS, , , , ,	WITHOUT COLOR	
4	MDAD00	DECO,CAMERA	MDAD0049801	ELECTROFORMING, Cu, , , , ,	SILVER	51
4	MPBT00	PAD,CAMERA	MPBT0081501	COMPLEX, (empty), , , , ,	BLACK	46
4	MPBU00	PAD,CONNECTOR	MPBU0085101	COMPLEX, (empty), , , , ,	BLACK	
4	MPBZ00	PAD	MPBZ0252601	COMPLEX, (empty), , , , ,	BLACK	45

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
4	MPBZ01	PAD	MPBZ0266501	COMPLEX, (empty), , , , ,	WITHOUT COLOR	59
4	MTAA00	TAPE,DECO	MTAA0201901	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
4	MTAE00	TAPE,WINDOW(SUB)	MTAE0039701	COMPLEX, (empty), , , , ,	WITHOUT COLOR	52
4	MWAE00	WINDOW,CAMERA	MWAE0051401	CUTTING, Tempered Glass, , , , ,	BLACK	53
3	ACGV00	COVER ASSY,BAR	ACGV0009701		TITANIUM	
4	ACGK00	COVER ASSY,FRONT	ACGK0142301		TITANIUM	A
5	MCJK00	COVER,FRONT	MCJK0112301	MOLD, PC LUPOY SC-2302, , , , ,	TITANIUM	5
6	MFEZ00	FRAME	MFEZ0021301	PRESS, STS, , , , ,	WITHOUT COLOR	
6	MICZ00	INSERT	MICZ0028601	CUTTING, BeCu, , , , ,	Without Color	
5	MFBB00	FILTER,RECEIVER	MFBB0033301	COMPLEX, (empty), , , , ,	BLACK	9
5	MIAA00	INDICATOR,LED	MIAA0027601	MOLD, PC LUPOY GP-1000L, , , , ,	MATALLIC BLACK	13
5	MPBH00	PAD,MIKE	MPBH0051001	COMPLEX, (empty), , , , ,	BLACK	12
5	MTAD00	TAPE,WINDOW	MTAD0112901	COMPLEX, (empty), , , , ,	BLACK	4
5	MTAJ00	TAPE,FLEXIBLE PCB	MTAJ0024301	COMPLEX, (empty), , , , ,	BLACK	8
4	AFBZ00	FRAME ASSY	AFBZ0014101	MIDDLE SIDE	DARK SILVER	E
5	MBJL00	BUTTON,SIDE	MBJL0098001	COMPLEX, (empty), , , , ,	TITANIUM	33
5	MBJL01	BUTTON,SIDE	MBJL0097801	COMPLEX, (empty), , , , ,	TITANIUM	25
5	MBJL02	BUTTON,SIDE	MBJL0097901	COMPLEX, (empty), , , , ,	TITANIUM	28
5	MBJL03	BUTTON,SIDE	MBJL0098201	COMPLEX, (empty), , , , ,	TITANIUM	32
5	MCCE00	CAP,RECEPTACLE	MCCE0053601	COMPLEX, (empty), , , , ,	TITANIUM	24
5	MCCG00	CAP,MULTIMEDIA CARD	MCCG0021801	COMPLEX, (empty), , , , ,	TITANIUM	31
5	MCJZ00	COVER	MCJZ0060301	MOLD, PC LUPOY SC-1004ML, , , , ,	DARK SILVER	29
5	MDAC00	DECO,SIDE	MDAC0028501	MOLD, PC LUPOY SC-1004ML, , , , ,	TITANIUM	23
6	MHBY00	HANDSTRAP	MHBY0008701	CUTTING, STS, , , , ,	SILVER	
5	MFEZ00	FRAME	MFEZ0021401	PRESS, STS, , , , ,	WITHOUT COLOR	
6	MICE00	INSERT,NUT	MICE0012601	PRESS, STS, , , , ,	WITHOUT COLOR	
5	MIDZ00	INSULATOR	MIDZ0242001	COMPLEX, (empty), , , , ,	WITHOUT COLOR	

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	MTAA00	TAPE,DECO	MTAA0201801	COMPLEX, (empty), , , ,	GREEN BLUE	20
5	MTAB01	TAPE,PROTECTION	MTAB0334501	COMPLEX, (empty), , , ,	GREEN BLUE	34
5	MTAB02	TAPE,PROTECTION	MTAB0334701	COMPLEX, (empty), , , ,	GREEN BLUE	21
5	MTAB03	TAPE,PROTECTION	MTAB0360101	COMPLEX, (empty), , , ,	WITHOUT COLOR	22
5	MTAB04	TAPE,PROTECTION	MTAB0371001	COMPLEX, (empty), , , ,	WITHOUT COLOR	
5	MTAB05	TAPE,PROTECTION	MTAB0359101	COMPLEX, (empty), , , ,	WITHOUT COLOR	27
4	MGAZ00	GASKET	MGAZ0078601	COMPLEX, (empty), , , ,	WITHOUT COLOR	
4	MGAZ01	GASKET	MGAZ0078701	COMPLEX, (empty), , , ,	WITHOUT COLOR	
4	MIAA00	INDICATOR,LED	MIAA0027701	MOLD, PC LUPOY GP-1000L, , , ,	MATALLIC BLACK	6
4	MPBG00	PAD,LCD	MPBG0097701	COMPLEX, (empty), , , ,	BLACK	B, 16
4	MPBJ	PAD,MOTOR	MPBJ0071101	COMPLEX, (empty), , , ,	BLACK	11
4	MPBN00	PAD,SPEAKER	MPBN0080401	COMPLEX, (empty), , , ,	BLACK	F, 37
4	MPBT	PAD,CAMERA	MPBT0081401	COMPLEX, (empty), , , ,	BLACK	10
4	MTAB00	TAPE,PROTECTION	MTAB0335001	COMPLEX, (empty), , , ,	TRANSPAR ENT	2
4	MTAB01	TAPE,PROTECTION	MTAB0351501	COMPLEX, (empty), , , ,	TRANSPAR ENT	1
4	MTAB02	TAPE,PROTECTION	MTAB0369601	COMPLEX, (empty), , , ,	WITHOUT COLOR	
4	MWAC	WINDOW,LCD	MWAC0126501	COMPLEX, (empty), , , ,	BLACK	3
3	GMEY00	SCREW MACHINE,BIND	GMEY0017002	1.4 mm,2.3 mm,SWCH18A ,N ,SQR , , ; ,BH ,[empty] ,2.7mm ,2.3mm+0.0mm,-0.2mm ,SWRCH ,WHITE ,[empty] ,[empty]		J, 54
3	MLAA00	LABEL,APPROVAL	MLAA0062304	COMPLEX, (empty), , , ,	WITHOUT COLOR	
5	ACKA00	CAN ASSY,SHIELD	ACKA0019001	MAIN HOOK	WITHOUT COLOR	42
6	MCBA00	CAN,SHIELD	MCBA0056601	PRESS, STS, , , ,	WITHOUT COLOR	41
6	MIDZ00	INSULATOR	MIDZ0236801	COMPLEX, (empty), , , ,	BLACK	
6	MLAB00	LABEL,A/S	MLAB0001102	C2000 USASV DIA 4.0	WHITE	
6	MPBZ00	PAD	MPBZ0252701	COMPLEX, (empty), , , ,	BLACK	

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	MPBZ02	PAD	MPBZ0258601	COMPLEX, (empty), , , ,	BLACK	
6	MSAZ00	SHEET	MSAZ0057701	COMPLEX, (empty), , , ,	WITHOUT COLOR	
6	MTAZ00	TAPE	MTAZ0264501	COMPLEX, (empty), , , ,	BLACK	7
5	MPBZ	PAD	MPBZ0266601	COMPLEX, (empty), , , ,	WITHOUT COLOR	
5	MPBZ00	PAD	MPBZ0266601	COMPLEX, (empty), , , ,	WITHOUT COLOR	
7	MGAZ00	GASKET	MGAZ0078801	COMPLEX, (empty), , , ,	WITHOUT COLOR	
7	MGAZ01	GASKET	MGAZ0078501	COMPLEX, (empty), , , ,	WITHOUT COLOR	
7	MTAZ00	TAPE	MTAZ0256401	COMPLEX, (empty), , , ,	BLACK	
7	MTAZ01	TAPE	MTAZ0259701	COMPLEX, (empty), , , ,	BLACK	
8	ANT222	CONTACT,ANTENNA	MCIA0019501	PRESS, BeCu, , , ,	Without Color	
5	MLAZ00	LABEL	MLAZ0038301	PID Label 4 Array	WITHOUT COLOR	
6	SC601	CAN,SHIELD	MCBA0056801	PRESS, NS, , , ,	WITHOUT COLOR	

12. EXPLODED VIEW & REPLACEMENT PART LIST

12.2 Replacement Parts <Main component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
1		IMT,BAR/FLIP	TIMT0009201		BLACK	
4	SNGF00	ANTENNA,GSM,FIXED	SNGF0050302	3.0 ,-2.0 dBd, ,GSM850/GSM900/DCS/PCS/BAND1/BAND2/BAND8, INTERNAL ; ,MULTI ,-2.0 ,50 ,3.0		M, 47
4	SMZY00	MODULE,ETC	SMZY0022601	Optical Mouse Module ; ,Module Assembly		D, 15
4	SVLM	LCD MODULE	SVLM0034801	Main ,3.0" ,240*400 ,43.08*75.3*1.9t ,262K ,TFT ,TM ,S6D04D1X11 ,MDDI IF ,		C, 17
3	SAFY00	PCB ASSY,MAIN	SAFY0341501		BLACK	G, 38
4	SAFB	PCB ASSY,MAIN,INSERT	SAFB0106101			
5	BRAH00	RESIN,PC	BRAH0001301	; , , , , [empty]	Black	
5	SACY00	PCB ASSY,FLEXIBLE	SACY0105001			
6	SACE00	PCB ASSY,FLEXIBLE,SMT	SACE0094701			
7	SACD00	PCB ASSY,FLEXIBLE,SMT TOP	SACD0082301			
8	ESCY00	SWITCH,TACT	ESCY0006101	15 V,20 mA,HORIZONTAL ,1 G, ; , ,1C1P , [empty] , [empty] , [empty] , [empty]		
7	SPKY	PCB,SIDEKEY	SPKY0078001	POLYI , mm,MULTI-2 , ; , , , , , , , , , ,		
5	SAJY	PCB ASSY,SUB	SAJY0044201			H, 43
6	SAJB00	PCB ASSY,SUB,INSERT	SAJB0021701			
7	BRAH00	RESIN,PC	BRAH0001301	; , , , , [empty]	Black	
7	SNGF00	ANTENNA,GSM,FIXED	SNGF0051902	3.0 ,-2.0 dBd, ,GPS/BAND1 DIVERSITY, INTERNAL ; ,DUAL ,3.0 ,50 ,-2.0		
7	SUSY00	SPEAKER	SUSY0027506	ASSY ,8 ohm,90 dB,1812 mm,3.4T 10mm ; , , , , , , , [empty]		
7	SVCY00	CAMERA	SVCY0017301	CMOS ,MEGA ,5M AF [FPCB, Sony 5M 1/3.2"(IMX034), CCP2]		
6	SAJE00	PCB ASSY,SUB,SMT	SAJE0035201			
7	SAJC00	PCB ASSY,SUB,SMT BOTTOM	SAJC0034201			
8	ANT201	ANTENNA,GSM,FIXED	SNGF0006701	3.0 ,-2.0 dBd, ,BLUETOOTH, SMD, 9.0*3.0*1.4 , ,SINGLE ,-2.0 ,50 ,3.0		
8	C109	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
8	C112	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
8	C114	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
8	C115	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
8	C118	CAP,CERAMIC,CHIP	ECCH0000133	220 pF,50V ,K ,X7R ,HD ,1005 ,R/TP		
8	C125	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
8	C201	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
8	C202	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
8	C203	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
8	C204	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
8	C205	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
8	C206	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
8	C207	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C209	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
8	C210	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
8	C211	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
8	C212	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
8	C213	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
8	C214	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
8	C215	CAP,CERAMIC,CHIP	ECCH0000109	8 pF,50V,D,NP0,TC,1005,R/TP		
8	C216	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
8	C220	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C221	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
8	C222	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C223	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C224	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
8	CN101	CONNECTOR,BOARD TO BOARD	ENBY0045401	60 PIN,0.4 mm,STRAIGHT , , , , 0.40MM ,STRAIGHT ,MALE ,SMD , [empty] , ,		
8	CN102	CONNECTOR,BOARD TO BOARD	ENBY0034201	24 PIN,0.4 mm,ETC , ,GB042 H=1.0, Socket		
8	D101	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
8	D107	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
8	FB102	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
8	FB103	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
8	FB104	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
8	FB201	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
8	FB202	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
8	L101	INDUCTOR,CHIP	ELCH0004722	47 nH,J ,1005 ,R/TP ,		
8	L201	INDUCTOR,CHIP	ELCH0004703	1 nH,S ,1005 ,R/TP ,		
8	L202	INDUCTOR,SMD,POWER	ELCP0008007	3.3 uH,N ,2.5*2.0*1.0 ,R/TP ,MLCI Power , ,3.3 ,30% , , , , ,SHIELD ,2.5X2X1MM ,[empty] ,[empty] ,Inductor,Wire Wound,Chip		
8	L203	INDUCTOR,SMD,POWER	ELCP0008001	4.7 uH,M ,2.5*2.0*1.0 ,R/TP ,		
8	R109	RES,CHIP,MAKER	ERHZ0000439	200 Kohm,1/16W ,J ,1005 ,R/TP		
8	R201	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
8	R299	RES,CHIP,MAKER	ERHZ0000401	0 ohm,1/16W ,J ,1005 ,R/TP		
8	SW101	SWITCH,TACT	ESCY0006901	5 V,50 mA,HORIZONTAL , G , , ,1C1P ,[empty] ,[empty] ,[empty] , ,R		
8	U201	IC	EUSY0355701	PLP1010-4 ,4 PIN,R/TP ,150mA 2.8V Single LDO , , ,IC,Voltage Regulator		
8	U202	MODULE,ETC	SMZY0019601	WLAN(11b/g)+Bluetooth+FM Module 9 x 7.8 x 1.2 (BCM4325) , , Bluetooth		
8	VA101	VARISTOR	SEVY0001001	14 V , ,SMD ,50pF, 1005		
8	X201	TCXO	EXST0001901	26 MHz,2.5 PPM,10 pF,SMD ,32*15*1.0 ,TI_WL1251 , , ,2.5PPM ,2.8V , , , ,SMD ,R/TP		
7	SAJD00	PCB ASSY,SUB,SMT TOP	SAJD0036601			
8	C103	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C104	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C105	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
8	C106	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
8	C107	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C110	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C111	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C113	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C119	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C120	CAP,CERAMIC,CHIP	ECCH0010501	7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP , ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
8	C121	CAP,CERAMIC,CHIP	ECCH0010501	7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP , ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
8	C122	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C123	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		

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Level	Location No.	Description	Part Number	Spec	Color	Remark
8	C124	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
8	C591	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
8	C592	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
8	CN501	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
8	D102	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
8	D103	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
8	D591	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
8	D592	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
8	FB101	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
8	FB105	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
8	L598	INDUCTOR,CHIP	ELCH0004203	68 nH,J ,1608 ,R/TP ,		
8	L599	INDUCTOR,CHIP	ELCH0004203	68 nH,J ,1608 ,R/TP ,		
8	R101	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
8	R102	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
8	R103	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
8	R104	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
8	R105	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
8	R107	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
8	R108	RES,CHIP,MAKER	ERHZ0000411	120 ohm,1/16W ,J ,1005 ,R/TP		
8	R110	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
8	U101	IC	EUSY0321201	BGA ,64 PIN,R/TP ,6*6 ISP		
8	U102	IC	EUSY0319001	WDFN-8L ,8 PIN,R/TP ,300mA/300mA 2.8V/1.8V Dual LDO		
7	SPCY	PCB,FLEXIBLE	SPCY0195401	POLYI , mm,MULTI-6 , , , , , , , , , ,		
5	SJMY00	VIBRATOR,MOTOR	SJMY0008504	2.0 V,0.1 A,10*3.6 ,12mm linear motor , , ,3V , , , , , , ,		
5	SPKY01	PCB,SIDEKEY	SPKY0078101	POLYI , mm,MULTI-2 , , , , , , , , , ,		
4	SAFF02	PCB ASSY,MAIN,SMT	SAFF0252401			
5	SAFC00	PCB ASSY,MAIN,SMT BOTTOM	SAFC0133701			
6	BAT501	BATTERY,CELL,LITHIUM	SBCL0001305	3 V,1 mAh,COIN ,SMT Temp.260 degree. PB-Free B/B		
6	C101	CAP,CHIP,MAKER	ECZH0000803	2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C102	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C104	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C105	CAP,CERAMIC,CHIP	ECCH0001001	6.8 pF,50V ,D ,NP0 ,TC ,1005 ,R/TP , , , 0.5PF ,50V ,NP0 ,[empty] ,1005 ,R/TP , mm		
6	C106	INDUCTOR,CHIP	ELCH0005001	2.2 nH,S ,1005 ,R/TP ,		
6	C107	CAP,TANTAL,CHIP	ECTH0001903	22 uF,6.3V ,M ,L_ESR ,1608 ,R/TP		
6	C108	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C109	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C110	INDUCTOR,CHIP	ELCH0001052	18 nH,J ,1005 ,R/TP ,PBFREE		
6	C111	CAP,CHIP,MAKER	ECZH0000802	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C112	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C113	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C114	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C115	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C116	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C117	CAP,CERAMIC,CHIP	ECCH0017601	4.7 uF,6.3V ,M ,X5R ,HD ,1005 ,R/TP , , , 20% ,6.3V ,X5R , -55TO+85C ,1005 ,R/TP , mm		
6	C118	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C119	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C120	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C121	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C122	CAP,CERAMIC,CHIP	ECCH0000129	120 pF,50V,J,NP0,TC,1005,R/TP		
6	C124	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C125	INDUCTOR,CHIP	ELCH0001057	3.9 nH,S ,1005 ,R/TP ,PBFREE		
6	C126	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C127	CAP,CERAMIC,CHIP	ECCH0000183	1.8 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C128	CAP,CERAMIC,CHIP	ECCH0000183	1.8 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C129	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C130	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C131	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C132	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C134	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C135	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C136	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C137	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C138	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C139	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C140	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C141	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C142	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C144	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C145	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
6	C146	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
6	C147	CAP,CHIP,MAKER	ECZH0000846	8.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C148	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C149	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C150	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C151	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C152	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C153	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C154	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C155	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C156	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C157	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C158	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C159	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C160	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C161	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C162	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C163	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , [empty] , [empty] , [empty] , [empty] , .5 mm		
6	C164	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C166	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	C167	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C168	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C169	CAP,CERAMIC,CHIP	ECCH0000701	1.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C171	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C172	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C173	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C174	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C175	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , [empty] , [empty] , [empty] , [empty] , .5 mm		
6	C176	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C177	CAP,CERAMIC,CHIP	ECCH0000195	3.9 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C178	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C181	CAP,CERAMIC,CHIP	ECCH0000183	1.8 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C182	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C183	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C184	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C185	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C186	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	C187	CAP,CHIP,MAKER	ECZH0001002	0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C188	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C190	INDUCTOR,CHIP	ELCH0004720	1.2 nH,S ,1005 ,R/TP ,		
6	C191	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C192	CAP,CERAMIC,CHIP	ECCH0004906	2.5 pF,50V ,C ,X7R ,TC ,1005 ,R/TP		
6	C193	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C194	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C195	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C196	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C197	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C198	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C199	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C200	INDUCTOR,CHIP	ELCH0001056	2.7 nH,S ,1005 ,R/TP ,PBFREE		
6	C201	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C202	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C204	INDUCTOR,CHIP	ELCH0004703	1 nH,S ,1005 ,R/TP ,		
6	C205	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C206	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] , [empty] , [empty] , [empty] , [empty] ,0.8 mm		
6	C208	CAP,CERAMIC,CHIP	ECCH0000701	1.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C209	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C210	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C211	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C212	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C213	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C214	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , [empty] , [empty] , [empty] , [empty] , [empty] ,5 mm		
6	C215	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C217	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C218	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C219	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C220	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C221	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C222	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C223	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , [empty] , [empty] , [empty] , [empty] , [empty] ,5 mm		
6	C224	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C225	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C226	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C227	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C228	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C229	CAP,CERAMIC,CHIP	ECCH0000195	3.9 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C230	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C231	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C232	CAP,CERAMIC,CHIP	ECCH0000701	1.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C241	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C242	RES,CHIP,MAKER	ERHZ0000401	0 ohm,1/16W ,J ,1005 ,R/TP		
6	C245	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C246	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C247	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C248	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C249	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C250	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C251	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C252	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C253	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C254	CAP,TANTAL,CHIP	ECTH0001903	22 uF,6.3V ,M ,L_ESR ,1608 ,R/TP		
6	C256	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C257	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C258	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C259	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C260	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C261	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C262	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C263	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C264	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C265	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C267	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C268	CAP,CERAMIC,CHIP	ECCH0010501	7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C269	CAP,CERAMIC,CHIP	ECCH0010501	7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C301	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C302	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C303	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C304	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C305	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C306	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C307	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C308	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C309	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C310	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C311	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C312	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C313	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C314	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C315	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C316	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C317	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C318	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C319	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C320	CAP,CERAMIC,CHIP	ECCH0000147	2.2 nF,50V,K,X7R,HD,1005,R/TP		
6	C321	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C322	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C323	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C324	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C325	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C326	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C327	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C328	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C329	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C330	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C331	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C334	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C335	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C336	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C337	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
6	C338	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C339	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C340	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C341	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C342	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C343	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C344	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
6	C401	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
6	C402	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C403	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C404	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C405	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C406	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C407	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C408	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C409	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C410	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C411	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C412	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C413	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C414	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C415	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C416	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C417	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C418	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
6	C419	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
6	C420	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C421	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C423	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C424	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C425	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C426	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C427	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C429	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C430	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C431	CAP,CHIP,MAKER	ECZH0003124	68 nF,16V ,K ,X7R ,HD ,1005 ,R/TP		
6	C433	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C434	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C435	CAP,CHIP,MAKER	ECZH0003124	68 nF,16V ,K ,X7R ,HD ,1005 ,R/TP		
6	C436	CAP,CHIP,MAKER	ECZH0001210	470 nF,10V ,Z ,Y5V ,HD ,1005 ,R/TP		
6	C437	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C439	CAP,CERAMIC,CHIP	ECCH0000138	390 pF,50V,K,X7R,HD,1005,R/TP		
6	C440	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C441	CAP,CHIP,MAKER	ECZH0001120	3.9 nF,50V ,K ,X7R ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C442	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C443	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C444	CAP,CHIP,MAKER	ECZH0004402	0.1 uF,16V ,Z ,X7R ,TC ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C445	CAP,CHIP,MAKER	ECZH0004402	0.1 uF,16V ,Z ,X7R ,TC ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C446	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C447	CAP,CERAMIC,CHIP	ECCH0000138	390 pF,50V,K,X7R,HD,1005,R/TP		
6	C448	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C449	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C450	CAP,TANTAL,CHIP	ECTH0005703	22 uF,10V ,M ,L ,ESR ,2012 ,R/TP , , ,[empty] ,[empty] ,[empty] , ,[empty] ,[empty] ,[empty] ,[empty]		
6	C451	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C452	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C453	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C454	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C455	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C456	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C457	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C458	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C459	CAP,TANTAL,CHIP	ECTH0005703	22 uF,10V ,M ,L ,ESR ,2012 ,R/TP , , , [empty] , [empty] , [empty] , [empty] , [empty] , [empty] , [empty] , [empty] , [empty]		
6	C460	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C461	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C462	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C463	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C464	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C465	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C467	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C468	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , , [empty] , [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
6	C469	CAP,TANTAL,CHIP	ECTH0001903	22 uF,6.3V ,M ,L ,ESR ,1608 ,R/TP		
6	C470	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , , [empty] , [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
6	C472	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C473	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
6	C475	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C505	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
6	C507	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C508	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C509	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C510	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C511	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C512	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C513	CAP,CHIP,MAKER	ECZH0001102	18000 pF,16V ,K ,X7R ,HD ,1005 ,R/TP		
6	C514	CAP,CHIP,MAKER	ECZH0001102	18000 pF,16V ,K ,X7R ,HD ,1005 ,R/TP		
6	C515	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C516	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C517	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C518	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C519	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C520	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C521	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C522	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C523	CAP,CHIP,MAKER	ECZH0001120	3.9 nF,50V ,K ,X7R ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C526	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C528	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C529	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C530	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C531	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C533	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C601	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C606	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C607	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C608	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C609	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
6	C610	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C611	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C612	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	CN401	CONNECTOR,I/O	ENRY0008801	5 , mm,ANGLE , , , , ,0.64MM ,ANGLE ,[empty] ,DIP ,[empty] ,		
6	CN402	CONNECTOR,ETC	ENZY0020402	3 ,2.5 mm,BOTTOM , ,		
6	CN504	CONNECTOR,BOARD TO BOARD	ENBY0034201	24 PIN,0.4 mm,ETC , ,GB042 H=1.0, Socket		
6	CN601	CONNECTOR,BOARD TO BOARD	ENBY0045501	60 PIN,0.4 mm,STRAIGHT , , , , ,0.40MM ,STRAIGHT ,FEMALE ,SMD ,[empty] , ,		
6	CN602	CONNECTOR,BOARD TO BOARD	ENBY0018601	10 PIN,.4 mm,STRAIGHT , ,H=0.9, SOCKET		
6	D201	DIODE,SWITCHING	EDSY0010501	ESC ,30 V,100 mA,R/TP ,SWITCH DIODE		
6	D202	DIODE,SWITCHING	EDSY0010501	ESC ,30 V,100 mA,R/TP ,SWITCH DIODE		
6	D203	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
6	D401	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	D402	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
6	D403	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
6	D404	DIODE,SWITCHING	EDSY0010501	ESC ,30 V,100 mA,R/TP ,SWITCH DIODE		
6	D405	DIODE,SWITCHING	EDSY0011901	EMD2 ,30 V,1 A,R/TP ,VF=1.5V(IF=200mA) , IR=30uA(VR=10V)		
6	D499	DIODE,SWITCHING	EDSY0010501	ESC ,30 V,100 mA,R/TP ,SWITCH DIODE		
6	D503	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
6	D599	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
6	D601	DIODE,TVS	EDTY0009801	SOT-963 ,5 V,25 W,R/TP , , , , , , , [empty] , [empty] ,2P ,1		
6	D602	DIODE,TVS	EDTY0009801	SOT-963 ,5 V,25 W,R/TP , , , , , , , [empty] , [empty] ,2P ,1		
6	D604	DIODE,TVS	EDTY0009801	SOT-963 ,5 V,25 W,R/TP , , , , , , , [empty] , [empty] ,2P ,1		
6	FB401	FILTER,BEAD,CHIP	SFBH0008102	1800 ohm,1005 ,Bead		
6	FB402	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
6	FB502	FILTER,BEAD,CHIP	SFBH0008102	1800 ohm,1005 ,Bead		
6	FB504	FILTER,BEAD,CHIP	SFBH0008102	1800 ohm,1005 ,Bead		
6	FB505	FILTER,BEAD,CHIP	SFBH0000909	60 ohm,1005 ,		
6	FB506	FILTER,BEAD,CHIP	SFBH0008102	1800 ohm,1005 ,Bead		
6	FB601	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
6	FL101	FILTER,SAW	SFSY0036601	1880 MHz,1.4*1.1*0.45 ,SMD ,1850.625M~1909.375M, IL 3.8, U-U, 50_0.3-50_0.3, USPCS Tx , , ,1880 ,1.4*1.1*0.45 ,SMD ,R/TP		
6	FL102	FILTER,SAW	SFSY0030003	881.5 MHz,1.4*1.1*0.6 ,SMD ,869M~894M, IL 2.3, 5pin, U-B, 50-200_82, W-BAND V Rx , , ,881.5 ,1.4*1.1*0.6 ,SMD ,R/TP		
6	FL103	FILTER,SAW	SFSY0037601	897.5 MHz,1.4*1.1*0.4 ,SMD ,880M~915M, IL 3.6, 5pin, U-U, 50-50, W-BAND VIII Tx , , ,897.5 ,1.4*1.1*0.4 ,SMD ,R/TP		
6	FL104	DUPLEXER,IMT	SDMY0001901	1950 MHz,2140 MHz,1.8 dB,2.4 dB,52 dB,43 dB,2.5*2.0*0.55 ,SMD ,Band1, 2520size, SAW, Rx unbal , , ,2140 ,2110 to 2170 ,1950 ,1920 to 1980 ,2.4 ,1.8 ,2.5x2.0x0.55 ,DUAL ,SMD ,R/TP		
6	FL105	FILTER,SAW	SFSY0024301	942.5 MHz,1.4*1.1*0.6 ,SMD ,5pin, Unbal-Bal, 50//150		
6	FL106	FILTER,SAW	SFSY0024302	1842.5 MHz,1.4*1.1*0.6 ,SMD ,5pin, Unbal-Bal, 50//150		
6	FL107	FILTER,SAW	SFSY0033403	1575.42 MHz,1.4*1.1*0.4 ,SMD ,1574.42M~1576.42M, IL 1.2, 5pin, U-U, 50-50, GPS HIGH ATTEN. , , ,1575.42 ,1.4*1.1*0.4 ,SMD ,R/TP		
6	FL108	FILTER,SAW	SFSY0024303	1960 MHz,1.4*1.1*0.6 ,SMD ,5pin, Unbal-Bal, 50//150		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	FL109	FILTER,SAW	SFSY0035101	1950 MHz,1.4*1.1*0.45 ,SMD ,1920M~1980M, IL 3.2, 5pin, U-U, 50-50, WCDMA BAND I Tx , ,1950 ,1.4*1.1*0.45 ,SMD ,R/TP		
6	FL110	DUPLEXER,IMT	SDMY0001601	897.5 MHz,942.5 MHz,2.5 dB,2.7 dB,50 dB,45 dB,3.0*2.5*1.25 ,SMD ,UMTS Band8 Rx Balanced Duplexer, SAW, 3025size , ,942.5 ,925to960 ,897.5 ,880to915 ,2.7 ,2.5 ,3.0x2.5x1.25 ,DUAL ,SMD ,[empty]		
6	FL111	FILTER,SAW	SFSY0035002	2140 MHz,1.4*1.1*0.45 ,SMD ,2110M~2170M, IL 2.3, 5pin, U-U, 50_4-50_1.3, WCDMA BAND I Rx , ,2140 ,1.4*1.1*0.45 ,SMD ,R/TP		
6	FL112	DUPLEXER,PCS	SDPY0004701	1880 MHz,1960 MHz,2.8 dB,3.2 dB,55 dB,50 dB,2.5*2.0*0.95 ,SMD ,FBAR, Band2 Rx unbal. , ,1960 ,1930 to 1990 ,1880 ,1850 to 1910 ,3.2 ,2.8 ,2.5x2.0x0.95 ,DUAL ,SMD ,R/TP		
6	FL113	FILTER,SAW	SFSY0035001	2140 MHz,1.4*1.1*0.45 ,SMD ,2110M~2170M, IL 2.3, 5pin, U-B, 50-100_20, WCDMA BAND I Rx , ,2140 ,1.4*1.1*0.45 ,SMD ,R/TP		
6	FL401	FILTER,EMI/POWER	SFEY0015301	SMD ,Pb-free_Bais , ,Filter,LCR		
6	FL501	FILTER,EMI/POWER	SFEY0011701	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (10 Ohm,7.5pF)		
6	FL502	FILTER,EMI/POWER	SFEY0015901	SMD ,ESD Common mode Filter , ,Filter,LCR		
6	FL601	FILTER,EMI/POWER	SFEY0013701	SMD ,18 V,4ch. EMI_ESD Filter (100 Ohm, 7.5pF)		
6	FL602	FILTER,EMI/POWER	SFEY0013701	SMD ,18 V,4ch. EMI_ESD Filter (100 Ohm, 7.5pF)		
6	FL603	FILTER,EMI/POWER	SFEY0013701	SMD ,18 V,4ch. EMI_ESD Filter (100 Ohm, 7.5pF)		
6	IC401	IC	EUSY0371201	WLP ,20 ,R/TP ,MUIC for 5Pin Micro USB , ,IC,Analog Switch		
6	IC501	IC	EUSY0360201	CSP ,20 ,R/TP ,Class D(mono) + Capless HP + A/S , ,IC,Audio Sub System		
6	J601	CONN,SOCKET	ENSY0001602	6 PIN,ETC ,5 IRECTIONAL ,2.54 mm,K(GC200)		
6	L102	INDUCTOR,CHIP	ELCH0004704	4.7 nH,S ,1005 ,R/TP ,		
6	L103	INDUCTOR,CHIP	ELCH0001056	2.7 nH,S ,1005 ,R/TP ,PBFREE		
6	L104	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	L105	INDUCTOR,CHIP	ELCH0004713	6.8 nH,J ,1005 ,R/TP ,		
6	L107	INDUCTOR,CHIP	ELCH0004720	1.2 nH,S ,1005 ,R/TP ,		
6	L108	INDUCTOR,CHIP	ELCH0001056	2.7 nH,S ,1005 ,R/TP ,PBFREE		
6	L109	INDUCTOR,CHIP	ELCH0003847	1.8 nH,S ,1005 ,R/TP ,chip coil		
6	L110	INDUCTOR,CHIP	ELCH0004704	4.7 nH,S ,1005 ,R/TP ,		
6	L112	INDUCTOR,CHIP	ELCH0001052	18 nH,J ,1005 ,R/TP ,PBFREE		
6	L113	INDUCTOR,CHIP	ELCH0001049	6.8 nH,J ,1005 ,R/TP ,PBFREE		
6	L115	INDUCTOR,CHIP	ELCH0001048	10 nH,J ,1005 ,R/TP ,PBFREE		
6	L116	INDUCTOR,CHIP	ELCH0004707	1.5 nH,S ,1005 ,R/TP ,		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	L117	INDUCTOR,CHIP	ELCH0004721	2.2 nH,S ,1005 ,R/TP ,		
6	L118	CAP,CHIP,MAKER	ECZH0000802	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	L121	INDUCTOR,CHIP	ELCH0004705	8.2 nH,J ,1005 ,R/TP ,		
6	L122	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	L123	INDUCTOR,CHIP	ELCH0004721	2.2 nH,S ,1005 ,R/TP ,		
6	L124	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	L125	INDUCTOR,CHIP	ELCH0001054	5.6 nH,S ,1005 ,R/TP ,PBFREE		
6	L126	INDUCTOR,CHIP	ELCH0004711	22 nH,J ,1005 ,R/TP ,		
6	L127	INDUCTOR,CHIP	ELCH0001056	2.7 nH,S ,1005 ,R/TP ,PBFREE		
6	L129	INDUCTOR,CHIP	ELCH0004704	4.7 nH,S ,1005 ,R/TP ,		
6	L130	INDUCTOR,CHIP	ELCH0001049	6.8 nH,J ,1005 ,R/TP ,PBFREE		
6	L131	INDUCTOR,CHIP	ELCH0004707	1.5 nH,S ,1005 ,R/TP ,		
6	L132	INDUCTOR,CHIP	ELCH0001054	5.6 nH,S ,1005 ,R/TP ,PBFREE		
6	L133	INDUCTOR,CHIP	ELCH0004727	100 nH,J ,1005 ,R/TP ,		
6	L134	INDUCTOR,CHIP	ELCH0004707	1.5 nH,S ,1005 ,R/TP ,		
6	L135	INDUCTOR,CHIP	ELCH0004720	1.2 nH,S ,1005 ,R/TP ,		
6	L401	INDUCTOR,SMD,POWER	ELCP0008005	4.7 uH,M ,2.5X2.0X1.0 ,R/TP ,MLCI ,; ,; ,20% ,; ,; ,; ,; ,; ,SHIELD ,2.5X2X1MM ,[empty] ,R/TP ,Inductor,Wire Wound,Chip		
6	L402	INDUCTOR,SMD,POWER	ELCP0008005	4.7 uH,M ,2.5X2.0X1.0 ,R/TP ,MLCI ,; ,; ,20% ,; ,; ,; ,; ,; ,SHIELD ,2.5X2X1MM ,[empty] ,R/TP ,Inductor,Wire Wound,Chip		
6	L403	INDUCTOR,SMD,POWER	ELCP0008005	4.7 uH,M ,2.5X2.0X1.0 ,R/TP ,MLCI ,; ,; ,20% ,; ,; ,; ,; ,; ,SHIELD ,2.5X2X1MM ,[empty] ,R/TP ,Inductor,Wire Wound,Chip		
6	L404	INDUCTOR,SMD,POWER	ELCP0008005	4.7 uH,M ,2.5X2.0X1.0 ,R/TP ,MLCI ,; ,; ,20% ,; ,; ,; ,; ,; ,SHIELD ,2.5X2X1MM ,[empty] ,R/TP ,Inductor,Wire Wound,Chip		
6	L405	RES,CHIP,MAKER	ERHZ0000463	33 ohm,1/16W ,J ,1005 ,R/TP		
6	L406	INDUCTOR,SMD,POWER	ELCP0010001	2.2 uH,M ,2.5x2.0x1.0 ,R/TP ,chip MLCI ,; ,; ,20% ,; ,; ,; ,; ,; ,NON SHIELD ,2.5X2X1MM ,[empty] ,R/TP		
6	L503	INDUCTOR,CHIP	ELCH0004717	82 nH,J ,1005 ,R/TP ,		
6	L504	INDUCTOR,CHIP	ELCH0004717	82 nH,J ,1005 ,R/TP ,		
6	Q401	TR,FET,P-CHANNEL	EQFP0008601	DFN8 ,1.3 W,-20 V,-3.9 A,R/TP ,Intergrated power MOSFET with PNP Transistor		
6	Q501	TR,FET,N-CHANNEL	EQFN0005601	ESM ,100 mW,30 V,100 mA,R/TP ,		
6	Q502	TR,FET,N-CHANNEL	EQFN0005601	ESM ,100 mW,30 V,100 mA,R/TP ,		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	Q503	TR,FET,N-CHANNEL	EQFN0005601	ESM ,100 mW,30 V,100 mA,R/TP ,		
6	R102	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R104	RES,CHIP,MAKER	ERHZ0000517	91 ohm,1/16W ,J ,1005 ,R/TP		
6	R105	RES,CHIP,MAKER	ERHZ0000415	130 ohm,1/16W ,J ,1005 ,R/TP		
6	R106	RES,CHIP,MAKER	ERHZ0000509	75 ohm,1/16W ,J ,1005 ,R/TP		
6	R107	RES,CHIP,MAKER	ERHZ0000517	91 ohm,1/16W ,J ,1005 ,R/TP		
6	R108	RES,CHIP,MAKER	ERHZ0003801	5.1 ohm,1/16W ,J ,1005 ,R/TP		
6	R109	RES,CHIP,MAKER	ERHZ0000456	2.2 ohm,1/16W ,J ,1005 ,R/TP		
6	R110	RES,CHIP,MAKER	ERHZ0003801	5.1 ohm,1/16W ,J ,1005 ,R/TP		
6	R112	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP		
6	R113	RES,CHIP,MAKER	ERHZ0000410	12 ohm,1/16W ,J ,1005 ,R/TP		
6	R114	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R115	RES,CHIP,MAKER	ERHZ0000506	6800 ohm,1/16W ,J ,1005 ,R/TP		
6	R116	RES,CHIP	ERHY0000105	51 ohm,1/16W,F,1005,R/TP		
6	R117	RES,CHIP,MAKER	ERHZ0000212	12 Kohm,1/16W ,F ,1005 ,R/TP		
6	R118	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R119	RES,CHIP	ERHY0009524	47 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R120	RES,CHIP	ERHY0024601	150 ohm,1/20W(0.05W) ,J ,0603 ,R/TP ,; ,150 ,0.05% ,1/20W ,0603 ,R/TP		
6	R121	RES,CHIP	ERHY0024601	150 ohm,1/20W(0.05W) ,J ,0603 ,R/TP ,; ,150 ,0.05% ,1/20W ,0603 ,R/TP		
6	R122	RES,CHIP,MAKER	ERHZ0000415	130 ohm,1/16W ,J ,1005 ,R/TP		
6	R201	RES,CHIP,MAKER	ERHZ0000484	470 ohm,1/16W ,J ,1005 ,R/TP		
6	R202	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R203	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R204	RES,CHIP,MAKER	ERHZ0000463	33 ohm,1/16W ,J ,1005 ,R/TP		
6	R205	RES,CHIP,MAKER	ERHZ0000438	20 Kohm,1/16W ,J ,1005 ,R/TP		
6	R206	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R207	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R208	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R209	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R210	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R212	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R214	RES,CHIP,MAKER	ERHZ0000222	150 Kohm,1/16W ,F ,1005 ,R/TP		
6	R215	RES,CHIP,MAKER	ERHZ0000532	560 Kohm,1/16W ,J ,1005 ,R/TP		
6	R216	RES,CHIP,MAKER	ERHZ0000286	4700 ohm,1/16W ,F ,1005 ,R/TP		
6	R217	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R218	RES,CHIP,MAKER	ERHZ0000463	33 ohm,1/16W ,J ,1005 ,R/TP		
6	R219	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R221	RES,CHIP,MAKER	ERHZ0000522	24 ohm,1/16W ,J ,1005 ,R/TP		
6	R222	RES,CHIP,MAKER	ERHZ0000522	24 ohm,1/16W ,J ,1005 ,R/TP		
6	R223	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R224	RES,CHIP,MAKER	ERHZ0000484	470 ohm,1/16W ,J ,1005 ,R/TP		
6	R225	RES,CHIP,MAKER	ERHZ0000484	470 ohm,1/16W ,J ,1005 ,R/TP		
6	R226	RES,CHIP,MAKER	ERHZ0000484	470 ohm,1/16W ,J ,1005 ,R/TP		
6	R227	RES,CHIP,MAKER	ERHZ0000484	470 ohm,1/16W ,J ,1005 ,R/TP		
6	R302	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R401	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R402	RES,CHIP	ERHY0009516	2.2 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R404	RES,CHIP,MAKER	ERHZ0000420	150 ohm,1/16W ,J ,1005 ,R/TP		
6	R405	RES,CHIP,MAKER	ERHZ0000420	150 ohm,1/16W ,J ,1005 ,R/TP		
6	R406	RES,CHIP,MAKER	ERHZ0000203	10 Kohm,1/16W ,F ,1005 ,R/TP		
6	R407	RES,CHIP,MAKER	ERHZ0000407	1000 Kohm,1/16W ,J ,1005 ,R/TP		
6	R408	RES,CHIP,MAKER	ERHZ0000420	150 ohm,1/16W ,J ,1005 ,R/TP		
6	R409	RES,CHIP,MAKER	ERHZ0000420	150 ohm,1/16W ,J ,1005 ,R/TP		
6	R410	RES,CHIP,MAKER	ERHZ0000420	150 ohm,1/16W ,J ,1005 ,R/TP		
6	R411	RES,CHIP,MAKER	ERHZ0000420	150 ohm,1/16W ,J ,1005 ,R/TP		
6	R412	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R413	RES,CHIP,MAKER	ERHZ0000437	2 Kohm,1/16W ,J ,1005 ,R/TP		
6	R414	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R415	RES,CHIP,MAKER	ERHZ0000437	2 Kohm,1/16W ,J ,1005 ,R/TP		
6	R416	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R417	RES,CHIP,MAKER	ERHZ0000212	12 Kohm,1/16W ,F ,1005 ,R/TP		
6	R418	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP		
6	R419	RES,CHIP,MAKER	ERHZ0000318	80.6 Kohm,1/16W ,F ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R420	RES,CHIP,MAKER	ERHZ0000537	680000 ohm,1/16W ,F ,1005 ,R/TP		
6	R421	RES,CHIP,MAKER	ERHZ0000487	470 Kohm,1/16W ,J ,1005 ,R/TP		
6	R422	RES,CHIP	ERHY0000161	200K ohm,1/16W,F,1005,R/TP		
6	R423	RES,CHIP	ERHY0000105	51 ohm,1/16W,F,1005,R/TP		
6	R424	RES,CHIP,MAKER	ERHZ0004201	121000 ohm,1/16W ,F ,1005 ,R/TP		
6	R425	RES,CHIP,MAKER	ERHZ0003901	0.1 ohm,1/4W ,F ,2012 ,R/TP ; ,0.1 ,1% ,1/4W ,2012 ,R/TP		
6	R427	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R428	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R429	RES,CHIP	ERHY0009516	2.2 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R502	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R503	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R506	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R507	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R508	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
6	R509	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
6	R511	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R512	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R513	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R514	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
6	R515	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
6	R516	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R517	RES,CHIP,MAKER	ERHZ0000301	560 Kohm,1/16W ,F ,1005 ,R/TP		
6	R518	RES,CHIP	ERHY0003501	220 ohm,1/16W ,J ,1005 ,R/TP		
6	R519	RES,CHIP	ERHY0000193	27 ohm,1/16W ,F ,1005 ,R/TP		
6	R524	RES,CHIP	ERHY0009532	6.8 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R525	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R526	RES,CHIP	ERHY0009511	1.5 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R527	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R528	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R529	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R530	RES,CHIP	ERHY0003501	220 ohm,1/16W ,J ,1005 ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R531	RES,CHIP	ERHY0000193	27 ohm,1/16W ,F ,1005 ,R/TP		
6	R599	RES,CHIP	ERHY0009504	1 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R601	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R602	RES,CHIP,MAKER	ERHZ0000422	15 Kohm,1/16W ,J ,1005 ,R/TP		
6	R603	RES,CHIP,MAKER	ERHZ0000499	5600 ohm,1/16W ,J ,1005 ,R/TP		
6	R604	RES,CHIP,MAKER	ERHZ0000407	1000 Kohm,1/16W ,J ,1005 ,R/TP		
6	R605	RES,CHIP	ERHY0009524	47 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R606	RES,CHIP	ERHY0009524	47 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R607	RES,CHIP	ERHY0009524	47 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R608	RES,CHIP	ERHY0009524	47 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R609	RES,CHIP,MAKER	ERHZ0000499	5600 ohm,1/16W ,J ,1005 ,R/TP		
6	R610	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
6	R611	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
6	R612	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
6	R613	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
6	R614	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
6	S601	CONN,SOCKET	ENSY0023301	8 ,ETC , ,0.7 mm,H=1.52,(15*15)		
6	SPFY	PCB,MAIN	SPFY0208201	FR-4 , mm,LX-BUMP 10 , , , , , , , , , ,		
6	SW101	CONN,RF SWITCH	ENWY0008101	=3.0, H=1.8, (3.2*3.0) ,SMD , dB, , ,0.13MM ,STRAIGHT ,SOCKET ,SMD ,[empty] ,[empty] , ,		
6	U101	PAM	SMPY0018801	28 dBm, %, A, dBc,28 dB,3x5 ,SMD ,3G Dual PAM B1+8. HELP , , , , , , , ,LGA ,R/TP ,14		
6	U102	PAM	SMPY0019501	29.5 dBm, %, A, dBc,29 dB,4x4x1.1 ,SMD ,WCDMA Band 2 Sinlge PAM. HELP3 , , , , , , , ,LGA ,R/TP ,10		
6	U103	COUPLER,RF DIRECTIONAL	SCDY0004301	20.5 dB,0.22 dB,34 dB,1.0*0.5*0.4 ,SMD ,Pb_free_KPCS+USPCS+WCDMA , , ,[empty] ,1865MHz ,230MHz ,SMD ,R/TP		
6	U104	MODULE,ETC	SMZY0021701	GPS LNA Module integrated Filter, 3.3x2.1x1.1 , , ,RF Module		
6	U105	IC	EUSY0344001	QFN ,68 ,R/TP ,Quad GSM, Tri WCDMA RF Transceiver , , ,IC,Tx/Rx		
6	U106	COUPLER,RF DIRECTIONAL	SCDY0004401	19.4 dB,0.25 dB,32 dB,1.0*0.5*0.4 ,SMD ,Pb-free_DCN+JCDMA , , ,[empty] ,874.5MHz ,101MHz ,SMD ,R/TP		
6	U107	RF MODULE,HANDSET	SMRH0004901	MHz, MHz, ,Tx Module(ASM + PAM) - WCDMA TriMode		
6	U108	COUPLER,RF DIRECTIONAL	SCDY0004301	20.5 dB,0.22 dB,34 dB,1.0*0.5*0.4 ,SMD ,Pb_free_KPCS+USPCS+WCDMA , , ,[empty] ,1865MHz ,230MHz ,SMD ,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	U201	IC	EUSY0344203	BGA ,543 ,R/TP ,543CSP,HSUPA, Standalone AP, H.264, WVGA, 8MCAM,Turbo 32MB ;, ;IC,Digital Baseband Processor		
6	U202	IC	EUSY0278501	SON5-P-0.50 ,5 PIN,R/TP ,INVERTER GATE, Pb Free		
6	U203	IC	EUSY0391601	UDFN6 ,6 ,R/TP ,Level shifter ;, ;IC,Bus Controller		
6	U302	IC	EUSY0363303	FBGA ,137 ,ETC ,FULLY 1.8V 4G(LB/256Mx16) NAND+2G(DDR/16Mx4x32) SDRAM ;, ;IC,MCP		
6	U401	IC	EUSY0242303	DFN ,8 ,R/TP ,Fuel gauge ;, ;IC,CMOS		
6	U402	IC	EUSY0320201	TFBGA ,36 PIN,R/TP ,USB2.0 Transceiver, 3.5X3.5X0.8		
6	U403	IC	EUSY0342201	CSP ,137 PIN,R/TP ,PMIC, for MSM7xxx ;, ;IC,PMIC		
6	U404	IC	EUSY0333701	TLLGA ,8 PIN,R/TP ,OVP		
6	U499	IC	EUSY0399301	VSO5F ,5 ,R/TP ,RESET IC ;, ;IC,Voltage Detector		
6	U502	IC	EUSY0383101	CSP ,35 ,R/TP ,3.15x3.15x0.55 ;, ;IC,Sub PMIC		
6	U504	IC	EUSY0378301	DFN ,10 ,R/TP ,3-Axis Acceleration Sensor, 3*3 ;, ;IC,PMIC		
6	U505	IC	EUSY0200803	MFL ,8 ,R/TP ,Haptic Driver IC,2X2 ;, ;IC,Motor Driver		
6	VA201	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA202	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA203	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA401	VARISTOR	SEVY0007301	5 V,<0.5pF ,SMD ,		
6	VA504	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA505	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA506	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA507	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA509	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA510	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA511	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA594	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA595	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA596	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA597	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA598	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA599	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA601	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	VA602	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA603	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	VA604	VARISTOR	SEVY0005201	5.5 V ,SMD ,1005, 50pF		
6	X201	VCTCXO	EXSK0007802	19.2 MHz,1.5 PPM,10 pF,SMD ,3.3*2.5*1.0 , , , ,2PPM ,2.8V , , , ,SMD ,P/TP		
6	X401	X-TAL	EXXY0024301	32.768 KHz,20 PPM,12.5 pF,70 Kohm,SMD ,3.2*1.5*0.9 , -40°C ~ +85°C, C0 1.05pF, C1 fF , ,32.768 ,20PPM ,12.5 , ,SMD ,R/TP		
6	ZD401	DIODE,TVS	EDTY0008602	SOD-323 ,13.3 V,400 W,R/TP ,PB-FREE		
6	ZD402	DIODE,TVS	EDTY0008601	SOD-323 ,6 V,400 W,R/TP ,PB-FREE		
5	SAFD00	PCB ASSY,MAIN,SMT TOP	SAFD0131001			
6	C532	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
6	C534	CAP,CERAMIC,CHIP	ECCH0017301	1 uF,6.3V ,M ,X5R ,HD ,0603 ,R/TP , , ,1 ,20% ,6.3V ,X5R , -55TO+85C ,0603 ,R/TP ,0.15 mm		
6	C535	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C536	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C602	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C603	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C604	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C605	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	CN603	CONNECTOR,ETC	ENZY0020701	4 PIN, mm,BOTTOM , ,		
6	D603	DIODE,TVS	EDTY0009801	SOT-963 ,5 V,25 W,R/TP , , , , , , , ,[empty] ,[empty] ,2P ,1		
6	D605	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
6	LD501	DIODE,LED,7-SEG	EDLS0001102	7 ,3 DIGIT,R/TP ,R,G,B 1.6*1.6*0.4		
6	LD502	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	LD503	DIODE,LED,CHIP	EDLH0011901	WHITE ,1608 ,R/TP ,PB-FREE(ZENER)		
6	MIC501	MICROPHONE	SUMY0010609	UNIT ,-42 dB,3.76*2.95*1.1 ,mems smd mic , , , , ,OMNI ,[empty] , ,[empty]		
6	R520	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R521	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	R522	RES,CHIP,MAKER	ERHZ0000478	3.3 ohm,1/16W ,J ,1005 ,R/TP		
6	R523	RES,CHIP	ERHY0009502	10 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
6	U501	IC	EUSY0376201	,8 ,R/TP , , , ,IC,PMIC		
6	U503	IC	EUSY0388201	WSOF6 ,5 ,R/TP ,1.6*1.6 , , ,IC,PMIC		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	U601	CAMERA	SVCY0019901	CMOS ,VGA ,Toshiba(1/10"), 4x4x2.23t, Reflow Type		

12. EXPLODED VIEW & REPLACEMENT PART LIST

12.3 Accessory

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
3	MHBY	HANDSTRAP	MHBY0004319	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
3	SBPP00	BATTERY PACK,LI-POLYMER	SBPP0027401	3.7 V,1500 mAh,1 CELL,PRISMATIC ,454261 WW LABEL ,; , , , ,PRISMATIC , , ,BLACK , ,	GRAY	K, 56
3	SGDY00	DATA CABLE	SGDY0017401	; ,[empty] ,[empty] ,1.2M ,26AWG ,BLACK , ,[empty]		
3	SGEY00	EAR PHONE/EAR MIKE SET	SGEY0005595	; ,RMS 20mW(0.56V,RMS) ,16 OHM ,116dB,1KHZ,3mW ,96dB100HZ ,116dB 1KHZ ,[empty] ,BLACK ,3.5PI 3POLE PLUG ,HIRO+CANAL(MICRO 5P PLUG) ,Earphone,Stereo		
3	SSAD00	ADAPTOR,AC-DC	SSAD0035001	100-240V ,5060 Hz,4.8 V,1 A,CE ,UK, Cableless ,; ,90Vac~264Vac ,4.8Vdc ,1A ,5060 , ,WALL 2P ,USB ,		

